ECONOMIC SURVEY OF EUROPE IN 1974

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Part II

Post-war demographic trends in Europe and the outlook until the year 2000

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ECONOMIC SURVEY
OF EUROPE IN 1974

PART II

POST-WAR DEMOGRAPHIC TRENDS IN EUROPE AND THE OUTLOOK UNTIL THE YEAR 2000

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PREFACE

This survey was prepared by the ECE secretariat. A major contribution was made by the Division of Social Affairs of the United Nations Secretariat in Geneva, particularly to chapter VII, and WHO and the International Labour Office were helpful in supplying some statistical data from their records. Some country projections and the two theoretical variants shown in chapter VII were prepared by the Population Division of the United Nations Secretariat. The project was financially assisted by the United Nations Fund for Population Activities.

A summary paper, incorporating the main findings of the full survey, was made available to the participants in the Consultations in Europe on the World Population Conference, 1974, held at Geneva from 29 May to 1 June 1974, and was subsequently submitted to the 1974 World Population Conference as a background document. The present publication contains the final text of *Post-war demographic trends in Europe and the outlook until the year 2000* and should be looked upon as an ECE contribution to World Population Year. It was considered, in draft form, at the Post-World Population Conference Consultation among ECE countries, held at Geneva from 7 to 11 July 1975.

The reader's attention is drawn to another demographic study prepared by the ECE secretariat, also in co-operation with the Division of Social Affairs, to be issued almost simultaneously by the Department of Economic and Social Affairs of the United Nations Secretariat in the Population Studies series, under the title: *Fertility and Family Planning in Europe around 1970: A Comparative Study of 12 National Surveys.* Some of the relevant findings of this comparative study have been incorporated in chapter V of the present survey.

The data which relate to the Federal Republic of Germany and the German Democratic Republic include the relevant data relating to Berlin. This is without prejudice to any question of status which may be involved.

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ABBREVIATIONS

ASFR	Age-specific fertility rate
ECE	Economic Commission for Europe
EEC	European Economic Community
GRR	Gross reproduction rate
OECD	Organisation for Economic Co-operation and Development
WHO	World Health Organization

* * *

The following symbols have been used throughout this *Survey*:
.. = not available or not pertinent;
— = nil or negligible.

Chapter I

INTRODUCTION

Europe, which has pioneered much of the modern era's most profound transformations in demographic behaviour, shows numerous signs of again breaking new ground. The population of its eastern, northern, western and southern regions combined should move close to the half-billion mark within a decade, under the momentum of present trends, while the population of the Union of Soviet Socialist Republics is likely to expand beyond its present quarter-billion level. Simultaneously, while these numbers have gone far beyond the levels of only a few decades ago, they have receded quite substantially relative to other continents. Europe's population growth rate is no more than about one-third of the global rate, a gap without precedent for centuries at least. Moreover, the gap is steadily widening, not only for Europe as a whole, but for all parts of the region, as both mortality and fertility everywhere on the continent have converged in unprecedented fashion. Europe today is more homogeneous in regional vital rate patterns than ever before in its recorded history, and the forces encouraging growing similarities appear far more potent than those making for differentiation. With mortality currently at a point where most national life expectancies are within a 70-year to 75-year interval and showing no major trends, while fertility is predominantly tending towards replacement or lower levels with few signs of reversal, Europe as a whole could approach near-zero natural increase of population in about a demographic generation from the present. Such situations have been extremely rare anywhere on the globe, even in any individual country, under low mortality conditions. For a multinational agglomeration, population stagnation—if it came to pass—would be unique.

Other associated shifts of considerable economic and social significance are under way or seem to be increasingly probable. The future age distribution will be determined in part by trends in future fertility, but several aspects of future age structure have already been determined by past vital events. Thus it now seems certain that the young population of school age will be stationary or will show a slight decline over at least the next 15 years or so; that the population of age to enter the work forces (15-19 years) will show only a modest increase over the next 20 years and, on the basis of currently available evidence, may be only marginally above 1970 levels by the end of the century; that while total populations of working age (15-59 years) seem likely to rise by some 20 per cent by the end of the century, the average age of the work forces will be rising; and that the fastest growing sector of Europe's population will be that aged 60 and over, with an increase by about one-quarter by the year 2000. Moreover, within this last group the greatest increase of some 50 per cent will be among the really old (aged 75 and over).

Since the Second World War there have been, as is traditionally the case, extensive movements of Europeans overseas, but the most dramatic change in migratory streams has been the intra-continental drifts from south to north which have turned western Europe from a traditionally sending area into one of substantial net immigration. The relocations of people displaced by war, extensive movement overseas and massive intra-continental shifts have, in total, been on a scale that ranks with the great waves of redistribution from antiquity to the Middle Ages. They can also be viewed as an extension internationally within Europe of the national trends towards urbanization, because much of the intra-continental drift has been essentially from the non-metropolitan areas of the less industrialized countries to the great industrial and urban centres of Europe's more highly industrialized countries.

Major changes have also occurred in the structure of the family and in patterns of family formation. In areas of traditionally young marriages, such as eastern and southern Europe, there has been a tendency towards some increase in the ages at first marriage. Areas of traditionally higher average age, such as western and northern Europe, have experienced major changes towards younger marriages, with much higher proportions of men and women marrying. Herein lies a major explanation of the baby boom of the 1950s, but when corrected for this factor the marital fertility patterns of Europe have almost all tended to move downwards. This downward trend in marital fertility has been particularly marked over the past decade, to bring an increasing number of countries close to, and even below replacement levels. These recent trends are being accompanied in some countries by further major changes in attitudes towards divorce, remarriage and even the *de jure* status of marriage itself which have major sociological implications. In summary, the patterns of marriage and family building are still in a state of change, but through all seem to be running adjustments which yield a completed family size averaging around two children per couple.

These general themes are among the conclusions or leading speculations suggested by the present study of Europe's population trends between approximately the end of the Second World War and the end of the century. Conceived partly as a contribution by ECE to World Population Year, the study forms part of a series of inter-related research projects being implemented by the ECE secretariat. A comparative analysis of fertility behaviour, attitudes and expectations in a dozen countries, mainly European, is due to appear at about the same time as the present study.[1] Internal migration is part of a third project which is focused on population redistribution. It is therefore not examined below except as reflected in post-war series of locality size distributions. Nor does this study focus directly on the socio-economic consequence of Europe's population change; this is clearly a separate research undertaking. The present study aims to provide the essential demographic background for such investigations.

Throughout the present survey, the comparisons made extend in several directions: between regions and countries at a given point or interval of time, between successive time periods within areas, between recent patterns and those suggested by longer-run perspectives and, at times, between Europe and other continents. The regional grouping of countries into four broad aggregations in addition to the USSR follows as a rule standard procedures employed in United Nations statistical and demographic publications.[2]

Chapter II, which follows, takes up population size, growth, sex-age structure and locality-size distribution since 1950, after reviewing some main trends during the period 1900-1950. Chapter III, on mortality, focuses on recent trends and current levels, international differences within and between regions, age-specific patterns, sex-differentials, cause-of-death determinants and prospects for future change. Again these are set against the perspective of longer-term trends and patterns, particularly since about 1945. Chapter IV is concerned with nuptiality and uses both census sources of information on marital status and flow-type data on total and first marriages, remarriages, widowhood and divorce. Real cohort information, in addition to period measures, is used to examine family formation, marital dissolution and marriage-age patterns, and this last factor is further explored in terms of socio-economic differentials, a topic rarely documented in depth in the literature. Chapter V, on fertility, discusses recent trends and current prospects, with special emphasis on the role of changing sex-age composition, nuptiality, childbearing rates within marriage, illegitimacy and spacing patterns. Fertility differentials by socio-economic categories, the nature and prevalence of birth limitation practices and likely directions for future change, are subjects also singled out for attention. International migration, the subject of chapter VI, is considered from the viewpoints of historical background during the first half of the century, followed by more detailed analysis of the 1950-1970 period with regard to size and changes of main migration streams among Europe's individual regions and countries, movements between Europe and other continents, and the probable impact of post-war migration on population size, growth, natural increase and sex-age structure in the main sending and receiving areas. Chapter VII, which deals with national and regional population projections to the year 2000, summarizes data prepared as a rule by individual countries and, in some cases, submitted directly to the ECE secretariat for purposes of this study. Special consideration has been given to international similarities and differences in forecasting assumptions, in addition to the numerical results as such. Section D of chapter VII provides two illustrative, longer-term projections prepared by the United Nations Secretariat. One assumes almost instantaneous movement of fertility to just below replacement levels (GRR = 1.000) in all regions of Europe, while the other assumes a level which is uniformly far below replacement. Such projections can be used to expose some major demographic consequences of the rapid fertility declines recently observed in various parts of the continent. Levels of fertility around replacement are already found in a number of areas. The below-replacement variant suggests levels that would soon be reached if contemporary trends continued for only a few more years. By carrying these theoretical projections forward for some 60 years they illustrate the changes in sex-age structure that would occur as stable situations are approached. Section E of chapter VII summarizes findings and comments upon some of the main prospects in the decades ahead.

Although the present survey does not deal with non-demographic implications or policy, these are often close to the surface of Europe's main demographic facts. International attention to the population problems of the developing regions (Latin America, Asia and Africa) has tended to blunt concern over the important, if very different, challenges posed by the major demographic changes now taking place in many higher-income parts of the world. The sharp rise in European levels of old-age dependency to be expected in the coming decades, reinforced by the effects of post-war fertility declines on future labour forces, raises new economic and social problems of great complexity and significance for the next quarter-century and beyond. The linkage between current fertility trends and future work force trends could make many of Europe's recent labour shortages appear mild in comparison with the ones to come, as the appearance of low fertility almost everywhere in recent years cuts back labour-force potential in areas of previous high fertility. Distribution and re-distribution of population, internally as well as internationally, will have central implications for industrial location, needs for urban and non-urban infrastructure, human resource development, health and welfare programmes, and indeed for most dimensions of the quality of life itself. Trends and patterns of mortality, in which both major past and likely future changes with regard to probable magnitudes of age incidence, causal elements and future prospects have too often been inadequately analysed, are also likely to have considerable social and economic implications for the future, whether past trends towards increased longevity continue or are halted, or are even reversed.

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[1] See *Fertility and Family Planning in Europe around 1970: A Comparative Study of 12 National Surveys* (forthcoming in the United Nations Population Studies series).

[2] See, for example, *Demographic Yearbook 1972* (United Nations publication, Sales No. E/F.73.XIII.1) p. 25, for the full list of areas by region. Most of the regional and national tables in the present survey include 23 or 24 largest populations only, specifically:

Eastern Europe: Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland and Romania;

Northern Europe: Denmark, Finland, Ireland, Norway, Sweden and the United Kingdom;

Western Europe: Austria, Belgium, France, the Federal Republic of Germany, Netherlands and Switzerland;

Southern Europe: Greece, Italy, Portugal, Spain and Yugoslavia (plus Albania where available).

In addition to these four regions, the survey covers also the USSR.

The list of major consequences of the fluid demographic situations now prevailing in Europe could easily be extended. Neither the social observer concerned with understanding Europe's future, nor the policy-maker seeking to influence it, can afford to ignore the general lesson that the main facts summarized in the following chapters are central elements in the evolving political, social and economic fabric of the continent as a whole and of all of its parts.

Chapter II

POPULATION SIZE, GROWTH AND STRUCTURE, 1950-1970

A. Background (1900-1950)

Europe had a population of almost 300 million in 1900, or about double the number in 1800.[1] About one-fifth of the total was in northern Europe and one-third in the western region, both of which had embarked in the nineteenth century upon the first multi-national transformations in the world's history from high to low birth and death rates. The remaining half of the continent's population was almost evenly divided between eastern and southern Europe, with most countries still some decades away from achieving correspondingly sustained downtrends in their vital rates.[2]

In both of the more developed regions average birth rates were below 30 per 1,000 by 1900 and were falling rapidly. Death rates, also plummeting in unprecedented manner, had pierced and generally gone far below the 20 per 1,000 mark. Although national vital rates still differed substantially within each region, neither the direction of future changes nor their sustained momentum were in doubt any longer.[3] In contrast, every eastern and southern population for which records are available had a birth rate in 1900 within a range of about 30 to 40 per 1,000 and a death rate between 20 to 30 per 1,000.

Much of Europe's demographic growth in the twentieth century can be traced to the substantial potential for natural increase (births minus deaths) implied in these figures. Between 1900 and 1920, despite substantial migration overseas and heavy human tolls exacted by the First World War and other political conflicts, the population of the four regions combined grew by nearly 10 per cent, or not greatly below Europe's long-term growth rates in the half-century since 1850. Similarly in 1920-1950, despite further major dampening effects on growth from out-migration and high mortality during parts of this period, the increase in the continent's population was 20 per cent, an even higher annual rate of change than in 1900-1920 (see tables II.1 and II.2).

TABLE II.1

Population size in Europe and the USSR, 1900-1970

(Millions)

Year	*Europe* [a]	*USSR* [b]
1900	294	127
1910	307	150
1920	325	155
1930	354	179
1940	379	195
1950	392	180
1960	425	214
1970	462	243

Sources: United Nations, *World Population Prospects as Assessed in 1963*, Population Studies, No. 41 (United Nations publication, Sales No. 66.XIII.2), tables A 3.1 and 13.1; *Demographic Yearbook 1970* (United Nations publication, Sales No. E/F.71.XIII.1); estimates by the ECE secretariat.

[a] Excluding the USSR.

[b] Estimates in present boundaries.

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[1] The 100-year annual rate of change therefore came to about 0.65 per cent, an average of the 0.6 and 0.7 per cent rates estimated respectively for the first and second half-centuries. See J. D. Durand, "The modern expansion of world population", *Proceedings of the American Philosophical Society*, vol. III, No. 3 (1967).

[2] As used throughout this chapter, "Europe" is taken to include four major regions—the east, north, west and south—outside the USSR, which is discussed separately. See foot-note 2 of chapter I for a list of the larger (1 million or over) populations in each region. Country references indicate, as nearly as possible, present-boundary areas; however, since substantial boundary changes in several national areas are not fully documented, some 1900 and 1910 estimates should be regarded as approximations only. Problems of shifting boundaries and data limitations generally were much smaller by 1920 than in the first two decades of this century; since 1950, these problems have essentially disappeared, Albania being the major exception.

[3] The highest and lowest national birth rates in the two regions combined were both in western Europe, ranging from about 35 per 1,000 in Austria and the Federal Republic of Germany to not much above 20 per 1,000 in France. Finland and the Netherlands were still slightly above 30 per 1,000, while Denmark, Norway, England and Wales, Belgium and Switzerland had reached 28 to 29 per 1,000 levels.

Crude death rates ranged between probably 20 to 25 per 1,000 on the high side, in Austria and France, to below 15 per 1,000 in most Scandinavian countries.

For convenient compilations of twentieth-century national birth and death rates in Europe, see *The Determinants and Consequences of Population Trends: New Summary of Findings on Interaction of Demographic, Economic and Social Factors*, vol. I, Population Studies, No. 50 (United Nations publication, Sales No. 71.XIII.5), tables IV.2, p. 66, and V.3, p. 112.

Although all crude vital rates, being affected by sex-age composition, are subject to distortion in making comparisons, they are quite adequate for the particular periods and broad delineations involved in this section. Birth rates in particular are likely to be highly correlated with theoretically superior measures of fertility, such as the gross reproduction rates discussed below in the present chapter and in chapter V. Comparative death rates, though much more vulnerable to distortion, were not dominated by age structure until the second half of this century. Certainly, early twentieth-century differences in death rates between Europe's northern and western regions on the one hand, and its eastern and southern regions on the other, portray the same kind of gulf in mortality conditions as are suggested by the more accurate but less readily available measures provided by life tables (see chapter III).

Table II.2

Decennial growth rates, in 23 countries, 1900-1910 to 1960-1970

(Percentages)

Region and country	*1900-1910*	*1910-1920*	*1920-1930*	*1930-1940*	*1940-1950*	*1950-1960*	*1960-1970*
Europe[a]	4.4	5.9	8.9	7.1	3.4	8.4	8.7
Eastern Europe	3.1	6.9	11.5	8.1	–6.8	9.5	8.3
Bulgaria	15.9	16.8	18.9	10.6	8.8	8.5	9.0
Czechoslovakia	6.9	–0.2	7.6	5.4	–15.8	10.2	7.5
German Democratic Republic	..	..	7.7	9.1	9.4	–6.2	0.9
Hungary	11.1	4.4	8.8	7.3	0.6	7.0	3.4
Poland	..	..	13.5	6.8	–20.7[a]	18.9	13.1
Romania	..	..	14.5	11.9	1.2	14.3	10.3
Northern Europe	8.5	5.0	4.9	5.1	6.0	4.5	5.4
Denmark	12.5	17.6	9.2	8.2	11.4	7.2	6.7
Finland	..	7.2	10.1	7.2	8.4	10.5	9.0
Ireland	–2.6	–1.2	–5.7	1.0	0.4	–4.6	0.2
Norway	6.2	11.7	6.5	5.9	9.8	9.7	8.9
Sweden	7.5	6.4	4.3	3.7	10.4	6.6	5.9
United Kingdom	10.0	3.9	4.9	5.1	5.0	3.7	4.9
Western Europe	2.0	3.8	7.1	4.3	8.1	9.9	7.1
Austria	..	..	3.5	0.3	3.4	2.1	2.0
Belgium	10.9	1.7	6.9	2.8	4.1	5.9	4.7
Germany, Federal Republic of	..	7.4	7.4	7.7	14.9	10.9	5.9
France	1.9	–1.1	6.2	0.4	1.0	9.4	8.4
Netherlands	..	16.4	15.6	12.6	13.9	13.5	11.1
Switzerland	13.2	3.4	4.6	4.5	10.9	14.2	10.4
Southern Europe	5.7	8.7	11.8	10.7	5.6	8.2	8.1
Greece	..	..	26.9	14.9	2.1	10.0	7.1
Italy	6.8	6.7	8.9	8.8	6.3	6.5	6.6
Portugal	9.9	0.7	13.4	13.1	9.2	5.0	5.6
Spain	7.2	6.4	10.6	9.9	8.2	8.7	9.2
Yugoslavia	..	..	15.3	14.4	–0.5	12.6	12.2
USSR	18.1	3.3	15.5	8.9	–7.7	18.9	13.6

Sources: United Nations, *World Population Prospects as Assessed in 1963*, Population Studies, No. 41 (United Nations publication, Sales No. 66.XIII.2), table A.3.8, pp. 141-142 for 1920-1960; *Demographic Yearbook*, various years; estimates by the ECE secretariat.

[a] Excluding the USSR.

Both before and after 1920 the basic keys to population were the same, though the details varied. On the one hand, governments (operating in a context of usually rising levels of living) could push down mortality substantially in all regions during peacetime and not infrequently during war, given rapidly evolving medical and sanitary technologies for enhancing death control. On the other, birth rates were sufficiently resistant to change or at least slow-moving enough to permit sustained growth under normal circumstances.[4]

For Europe as a whole, decennial growth from 1900 to 1950 was affected by a number of special events with major demographic consequences: large-scale emigration up to 1913, the First World War, the influenza epidemic of 1918-1919, the great depression of the 1930s, and the Second World War and genocidal programmes during the 1940s. The consequences of these events can be traced in the variations in growth rates illustrated in table II.2. But Europe had entered the twentieth century with a high growth potential: the estimated over-all birth rate was over 30 and the death rate at about 20 per 1,000 offered considerable scope for sustaining natural increase as life expectancies increased. Thus, while the special events described above created wide fluctuations in decennial growth rates, growth was always positive, varying between 3 and 9 per cent (table II.2).

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[4] Emphasis on Europe's population upsurge during its transition from high to low vital rates over the past 150 years has tended to obscure realization that the rates of such growth have been relatively low, rarely exceeding 1 to 1.5 per cent annually and far below this range on average. In contrast, the more recently settled continental areas of North America, Oceania and large parts of Central and South America showed typically much higher average rates during the nineteenth century, explained by both substantial in-migration and higher balances of births over deaths. More recently, in the regions of Latin America, Asia and Africa, in which the vital transitions have begun since 1900, growth rates have often been more than twice the maximum rates ever encountered in individual European countries. When regional comparisons are made, the differences are just as marked.

As some of these special events had particular regional implications, the variations within regions fluctuated markedly at times from the European decennial averages. Moreover, two major demographic patterns were clearly discernible at the beginning of the century. Birth rates and death rates were distinctly higher in eastern and southern Europe (and therefore their growth potential was greater) than in northern and western Europe (table II.3). The vital rates of each region in table II.3 must be interpreted with some caution as the accuracy of some of the components, especially in eastern and southern Europe, may be questioned; but the margins of error are probably insufficient to nullify the bimodal comparison just made or to change the basic differences in total regional growth patterns as given in table II.2.

A conclusion which follows from a comparison of the total growth rates of table II.2 and the natural growth patterns of table II.3 is that the two major population types of northern and western Europe on the one hand, and eastern and southern Europe on the other hand did not follow consistently growth patterns implied in their demographic profiles at the beginning of the century.

Eastern Europe with probably the highest growth potential of all regions in 1900 expanded its growth rate rapidly until 1930, then fell back in the next decade and suffered a major decline as a result of war and immediate post-war events, between 1940 and 1950. Southern Europe, the other area of clearly high growth potential in 1900, also increased its decennial growth rate until 1930 as was to be expected, and sustained the rate during the war decade. Northern Europe, with far lower birth and death rates around 1900, began with a relatively high rate and thereafter settled to a fairly steady decennial growth of around 5 per cent. Theoretically, western Europe might have been expected to have followed a similar pattern, but in fact its pattern was almost the

TABLE II.3

Decennial birth, death and natural increase rates, by region, 1900-1970

(*Weighted averages, per 1,000 population*)

Decade	*Europe*[a]	*Eastern Europe*[b]	*Northern Europe*	*Western Europe*	*Southern Europe*	*USSR*
			Birth rates			
1900-1909	31.4	38.5	27.3	27.4	34.3	47.2
1910-1919	25.4	32.5	22.9	19.1	30.1	38.0
1920-1929	25.1	32.0	19.6	20.4	30.2	40.5
1930-1939	20.9	25.7	15.7	17.1	25.9	36.0
1940-1949	20.4	25.0	17.9	17.8	22.4	. .
1950-1959	19.4	23.9	16.4	17.8	20.8	25.8
1960-1969	18.2	17.3	17.4	17.8	19.9	20.0
			Death rates			
1900-1909[c]	19.9	23.3	15.1	18.5	22.7	29.5
1910-1919	20.0	23.2	14.8	19.2	22.4	30.8
1920-1929	16.0	19.1	12.4	14.6	18.6	25.2
1930-1939	14.0	15.3	12.0	13.2	15.6	19.2
1940-1949	13.4	13.8	11.8	13.4	14.0	. .
1950-1959	10.7	10.3	11.0	11.2	10.0	8.6
1960-1969	10.3	8.7	11.2	11.0	9.4	7.4
			Rates of natural increase			
1900-1909	11.5	15.2	12.2	8.9	11.6	17.7
1910-1919	5.4	9.3	8.1	−0.1	7.7	7.2
1920-1929	9.1	12.9	7.2	5.8	11.6	15.3
1930-1939	6.9	10.4	3.7	3.9	10.3	16.8
1940-1949	7.0	11.2	6.1	4.4	8.4	. .
1950-1959	8.7	13.6	5.4	6.6	10.8	17.2
1960-1969	7.9	8.6	6.2	6.8	10.5	12.6

Sources: Estimates by the ECE secretariat; vital rates are from United Nations, *The Determinants and Consequences of Population Trends: New Summary of Findings on Interaction of Demographic, Economic and Social Factors*, vol. I, Population Studies, No. 50 (United Nations publication, Sales No. 71.XIII.5); population values are from United Nations, *Demographic Yearbook*, various years.

[a] Excluding the USSR.

[b] Excluding the German Democratic Republic.

[c] For 1906-1910

reverse of that of northern Europe, with a very low rate initially, rising quite rapidly until 1930, with a check due to the fall in fertility during the 1930s, and then, surprisingly, a sharp upward lift to finish the period with the highest growth of all the regions of Europe between 1940 and 1950 (table II.2).

The question of the uncertain accuracy of vital data between 1900 and 1950 referred to above with respect to eastern and southern Europe applies also to the USSR; but all available evidence suggests that this area began the century with a very high growth potential, as illustrated in the assessed vital rates in table II.3. The subsequent fluctuations in total growth were far greater in the USSR than in any region of Europe, ranging from a decennial loss of 8 per cent in 1940-1950 to a maximum gain of 18 per cent in 1900-1910.

The regional contrasts in net migration trends so suggested for the period 1900-1950 are clearly striking. In eastern Europe, net out-migration endured almost throughout the entire half century, with particularly large movements during 1900-1910 and again during 1940-1950. Northern Europe showed consistent out-migration to 1930, a tendency to in-migration during the 1930s and thereafter very little change. Western Europe began with significant net emigration in 1900-1910, followed by marked net immigration during the wartime decade 1910-1920, and substantial further net gains during the decade spanning the Second World War, 1940-1950. Southern Europe showed substantial out-migration during 1900-1910, as did all three of the other regions, but practically no net movements again until after 1940, when net emigration again occurred. The net result of these often compensatory movements is that Europe

TABLE II.4

Distribution of Europe's population within four broad regions, 1900-1970

Year	*Total*[a]	*Eastern Europe*	*Northern Europe*	*Western Europe*	*Southern Europe*
1900[b]	100.0	24.4	18.6	32.7	24.3
1910[b]	100.0	24.1	19.3	31.9	24.7
1920	100.0	24.2	19.1	31.2	25.5
1930	100.0	24.8	18.4	30.7	26.2
1940	100.0	25.0	18.0	29.9	27.1
1950	100.0	22.6	18.5	31.2	27.7
1960	100.0	22.8	17.8	31.7	27.7
1970	100.0	22.5	17.5	32.3	27.7

Sources: Estimates for 1900 and 1910 by the ECE secretariat; United Nations, *World Population Prospects as Assessed in 1963*, Population Studies, No. 41 (United Nations publication, Sales No. 66.XIII.2), for 1920 and 1960; *Demographic Yearbook 1970* (United Nations publication, Sales No. E/F.71.XIII.1).

[a] Excluding the USSR.

[b] Estimates in present boundaries.

The distribution of Europe's population by broad regions was, however, not greatly changed by these variations, as table II.4 indicates. None of the four regions experienced a shift of as much as four percentage points in its share of the total, either over the 1900-1950 period as a whole, or within any shorter period. The only region with a higher share of the total in 1950 than in 1900 was southern Europe. The share in each of eastern and northern Europe declined and that of western Europe showed little change.

The regional rates of total population change in table II.2, when compared with the rates of natural increase in table II.3, further suggest some major patterns of regional migration, since subtracting the indicated rates of natural increase from those of total growth yields approximate net rates of migration.[5]

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[5] Since table II.3 is on a per 1,000 basis, its data can be interpreted as approximating 10-year accumulations of annual percentage rates of natural increase, hence as being directly comparable with the 10-year percentage growth rates of table II.2. Alternatively, average annual rates of growth and natural increase in percentage terms could be obtained by dividing the entries of both tables by 10.

Inconsistencies between tables II.2 and II.3 because of rounding errors are possible but insignificant. Such possibilities apart, a rising share for a region implies an above-average rate of growth compared with all regions combined and a falling share indicates a below-average rate.

However, inconsistencies between tables II.2 and II.3 are possible for other reasons, notably differences in the periods they document and, above all, variations in accuracy of the data sources used (censuses for growth and vital registrations for natural increase). Discrepancies between the present section and chapter VI may stem from these origins.

In either source, moreover, since net migration is derived as a residual in both discussions, a given percentage error in the measure of total population change or of natural increase could result in an amplified percentage error of their difference. This would tend to be the case whenever net migration is a small fraction of either growth or natural increase. Thus, consider the familiar formula: Net Migration = (Change in Population)−(Natural Increase); let C denote actual (true) population change, N actual natural increase and therefore $M = C - N$, actual net migration. Suppose C is incorrectly measured by an error factor r so that only the apparent change C' is observed, where $C' = C(1 + r)$; similarly let $N' = N(1 + s)$. Then apparent net migration M' is given by $M' = C' - N' = (C + rC) - (N + sN)$; the relative error is $\frac{M' - M}{M} = \frac{rC - sN}{M}$. If actual net migration expressed as a proportion of total population change is given by $\frac{M}{C} = q$, so that $N = C(1 - q)$, the relative error of M can be expressed $(r - s + qs)\frac{C}{M} = \frac{1}{q}(r - s + qs)$.

The last can now be used to illustrate the effects of relative errors in C or N or M. For example, if change is incorrectly measured by plus 2 per cent, natural increase by plus 1 per cent and net migration is one-fourth of total change, the relative error would equal $(0.02 - 0.01 + 0.0025) \times 4$, or slightly over 4 per cent. Positive values for r and q, if associated with negative s, can quickly lead to much greater amplifications in the relative error of M.

as a whole had significant net rates of emigration during only two decades: in 1900-1910, when large-scale emigration to the United States of America was a predominant element, and again in 1940-1950 with the major emphasis on the post-war period after 1945.

The comparative stability to mid-century of Europe's population distribution among regions despite highly variable migration histories stems from the fact that dramatic vital revolutions affecting both fertility and mortality were the dominant forces. As shown in table II.3, birth rates fell by about one-half in eastern and southern Europe, one-fourth in the north and one-third among western populations. Death rates fell by almost one-half in the four regions combined, by over one-half in eastern and southern Europe and by about one-third in the north and west.

That these transitions reflect fertility and mortality trends as such, rather than mainly the effects of shifting age structure on crude birth and death rates, is clearly seen from the more refined measures listed in table II.5. Between 1920-1924 and 1950-1954, regional averages of gross reproduction rates fell by approximately 25, 15, 5 and 45 per cent in the east, north, west and south, respectively.[6] These compare with declines in birth rates of 20, 20, 15 and 30 per cent, in round terms, over the corresponding period. Similarly, although death rates over time or space are more apt to be distorted than birth rates by age differentials, as already noted, and were in fact substantially affected by this factor after 1950, they are valid enough for identifying regional rankings of mortality levels and trends before the mid-century.[7] In particular, the regional measures of expectation of life at birth in table II.5 clearly distinguish east and south from north and west with respect to 1930 levels and 1930-1950 trends in much the same manner as do the crude death rates of table II.3.

TABLE II.5

GRRs and expectation of life at birth, by region, selected periods between 1920 and 1970

(*Weighted averages, rates per woman and expectations in years*)

Period	*Europe* [a]	*Eastern Europe*	*Northern Europe*	*Western Europe*	*Southern Europe*
		Gross reproduction rates			
1920-1924	1.6	2.0	1.3	1.2	2.0
1935-1939	1.2	1.4	1.0	1.0	1.4
1950-1954	1.3	1.5	1.1	1.2	1.3
1965-1970	1.3	1.2	1.3	1.3	1.3
		Expectation of life at birth [b]			
1930	56	50	61	58	52
1950	65	61	69	67	62
1960	69	68	71	70	68
1970	71	70	72	72	71

Sources: United Nations, *World Population Prospects as Assessed in 1963*, Population Studies, No. 41 (United Nations publication, Sales No. 66.XIII.2), chapter 12, various tables; *World Population Prospects as Assessed in 1968*, Population Studies, No. 53 (United Nations publication, Sales No. 72.XIII.4), table A.2.1; *Demographic Yearbook*, various years; estimates by the ECE secretariat.

[a] Excluding the USSR.

[b] Combined sexes; dates approximate.

For Europe as a whole, the birth rate fell by well over 10 per 1,000 between the beginning and the middle of this century, despite resurgence of fertility toward the end of the period, shortly after the Second World War. In itself, such a decline would reduce the growth rate by about one percentage point annually. In fact, however, since the death rate had also fallen by nearly this amount, most of the effect of declining fertility on growth was neutralized. The natural increase for Europe as a whole of about 9 per 1,000 in the early 1950s was not far from what it had been some 30 years earlier, although it was about one-quarter below the 1900 figure (table II.3).

The relative constancy of Europe's aggregate rate of natural increase over the period 1920-1950 cloaks significant differentials in the natural increase among regions and variable patterns in trends among their component vital rates. The relative lack of aggregate change for Europe as a whole had been an outcome of temporary fluctuating movements over time which had accidentally hit a peak about 1950. Thus, part of the rise in natural increase in three regions between the 1930s and 1940s was undoubtedly a temporary reaction to the depression of the former decade and subsequent increases up to the 1950s could be explained as temporary demographic reactions, particularly with regard to nuptiality and marital fertility, to post-war improvements in economic standards of living. No region, indeed no nation on record within any region of Europe, gave indications around 1950 that it was likely to revert in any significant sense to the levels of mortality or fertility prevailing at the beginning of the century. The demographic evolution of the half century, while liable to substantial short-run deviations under the pressure of special circumstances, seemed clearly immune to reversals of basic trend.

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[6] Calculations are based on unrounded estimates in original sources.

[7] See chapter III for a much fuller discussion of this point.

Much the same interpretation appears valid for the Soviet Union, despite often significant contrasts with the four regions of Europe considered so far. Starting about 1900 with a far higher birth rate than was recorded for any other country in Europe, the USSR experienced a drop of nearly 50 per cent in this rate in the next half century and by 1950 had become roughly comparable in this respect with eastern Europe. Meanwhile, its death rate fell by well over two-thirds, easily the largest relative decline in any region, thereby enabling the USSR to sustain its role by 1950 as probably the fastest growing major area.[8] That these massive movements of both vital rates had practically offset each other is seen from the limited variations in the rate of natural increase over most of the 50-year period (although the record is obscured by gaps in the data). Within the period, however, the fluctuations appear to have been enormous in the USSR. The impact of the First World War is suggested by the phenomenal variations in growth rates between 1910-1920 and surrounding decades. While accurate figures are not available, the same phenomenon undoubtedly occurred again between 1940-1950, when there was a marked decrease in population.

To sum up the half century to 1950, all regions in Europe, including the USSR, experienced major long-term movements towards reduced mortality and fertility. Although there have been both numerous and sizable short-term fluctuations, no indication from 1900 until now, and none in prospect today, suggests that a return to early-twentieth century patterns is within the range of possibilities. Almost surely, therefore, 1900-1950 will prove to be the last long-term period in which substantial growth of Europe's population could be largely traced to high fertility, whether such a level is defined by Europe's own standards or those of any other continent.

B. Patterns since 1950

1. *Population growth*

Between 1950 and 1970 the combined population of Europe's east, north, west and south grew by over 17 per cent, the rates by individual regions being 18, 10, 17 and 16 per cent, respectively (table II.2). The population of the USSR grew at a rate of 33 per cent or almost double this average. All regional rates over the 20-year period were given an upward lift by the very rapid improvements in mortality after the Second World War. In all regions, save in southern Europe, the rates were also increased by substantial rises in total period fertility which endured in some areas into the early 1960s. Partly because of the further variable volumes of net migration in addition to changing vital rates, the north experienced somewhat higher rates of change in the 1960s than in the 1950s. Other regions and the USSR showed decelerating growth during these last two decades, the latter in a particularly marked fashion.

These more recent inequalities in regional growth rates continued on the whole the shifts in the regional shares of Europe's total population which were previously examined up to 1950. Southern Europe, which had continued to gain up to 1950, showed no change at all thereafter up to 1970. Western Europe, however, after experiencing a falling share during most of the first half of the century, saw its relative size rise steadily, in large part because of net immigration, to bring it back in 1970 almost to its proportion of 1900. Eastern Europe, after a generally rising share until 1940, followed by a sharp drop, showed no clear trend after 1950. Northern Europe continued its predominant pre-1950 tendencies by continuing on a downward trend.

Nationally, the largest decennial growth rates since 1950 were all during the 1950s, reaching nearly 19 per cent in Poland, about 13 to 15 per cent in Romania, the Netherlands, Switzerland and Yugoslavia, and about 10 to 11 per cent in Czechoslovakia, Finland, the Federal Republic of Germany, France and Greece. In three countries, Czechoslovakia, Poland and Yugoslavia, all of which experienced rapid growth during the 1950s, there had been an apparent decline (the only such recorded) during the period 1940-1950, so that the turnaround in the following decade may have been a process of demographic recovery from sudden deviations in trend. Boundary changes or other sources of statistical error may also have affected the apparent trends in one or more of these instances. Most of the countries of this group, it is further worth noting, recorded considerable deceleration of growth rates during the 1960s, although there were exceptions, for example Finland and Yugoslavia.

The 1950s also witnessed the only decennial declines in any national population of Europe during either of the post-war decades. These were in the German Democratic Republic and Ireland, both of which experienced considerably greater out-migration during the 1950s than in the 1960s, as is shown in chapter VI below.

Partly because all the regions contained countries with comparatively rapid growth during at least one decade between 1950 and 1970, the mix of contributions from migration and natural increase has differed widely. In particular, the high growth rates found in a number of countries of eastern Europe stemmed almost entirely from natural increase, whereas in the case of those in western Europe immigration was a substantial element. National components of population change in the post-war era are discussed more fully below.

Although no declines of population are on record for the 1960s, the German Democratic Republic and Ireland showed increases of less than 1 per cent for the entire decade. Austria's population also grew slowly, at a rate of 2 per cent- the same as in 1950-1960. The next lowest rates, for Hungary and Belgium, were 3.4 and 4.7 per cent, respectively. [illegible]

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[8] Quite possibly, the USSR is the only case during this century of a European population whose vital rates were comparable with those found in most of Latin America, Asia and Africa about 1950. Albania might have been in a similar relative position, but for it not even crude estimates are available for the early part of the century. For crude national birth and death rates in Europe since 1900, see appendix tables A.V.1 and A.III.2, respectively.

The fact that these are decennial rates should be emphasized. Converted to annual measures, they imply very low to almost insignificant annual increments. Indeed, only five countries in Europe—Poland, Romania, the Netherlands, Switzerland and Yugoslavia—have approximated or exceeded a 1 per cent annual rate of increase since about 1960. None of these grew by substantially more than 1 per cent and in the case of the Netherlands and Switzerland at least this was largely the result of volumes of immigration that may not recur. About twice as many nations showed lower rates in the 1960s as showed equal or rising rates, compared with the 1950s.

In short, the post-war data give no reason to believe that Europe as a whole or any of the countries of Europe may soon—or perhaps ever again—embark upon rapid growth, even if this is defined conservatively by a 1 per cent criterion.[9] Rather, the prospects for very slow growth rates seem about as assured as any social science forecast can be, while the onset, or at least the imminence, of population decline in not a few instances can no longer be judged too improbable to warrant attention.

2. *Components of change*

As before 1950 during this century, so, more recently, the great bulk of Europe's population growth has come from natural increase rather than from immigration.[10] Again, comparing the differences between tables II.2 and II.3, it will be noted that in the great majority of regions and periods the rates of increase due to migration have been a relatively minor fraction of the natural increase rates.[11] A significant exception was western Europe where the net immigration rate is estimated to have exceeded one-third of the natural increase rates after 1950 (table VI.1).

The ratio of net emigration to natural increase in eastern Europe also exceeded one-third during the 1950s, but was much lower in the 1960s. In southern Europe net emigration was about one-quarter of natural increase in each decade after 1950. For Europe as a whole these large inward and outward movements largely cancelled out, thus revealing the significance of intracontinental movements over the period 1950-1970. A net loss for Europe as a whole of about 2.6 million inhabitants in 1950-1960 and 889,000 in 1960-1970 represents the net overseas emigration. This receded, therefore, from about one-fourteenth of Europe's natural increase in 1950-1960 to an infinitesimal fraction in 1960-1970 (table VI.1).

As far as individual countries are concerned, the largest net emigration flows during the 1950s were from the German Democratic Republic, Ireland and Portugal; Spain and Yugoslavia were in intermediate positions. Large net immigration flows have been restricted to a few countries since 1950. The Federal Republic of Germany, France and Switzerland stand out especially in this regard. The United Kingdom provides the case of a country with large movements both inwards and outwards, but a limited net loss compared with natural increase. These national movements and their relation to individual growth patterns are treated in detail in chapter VI (tables VI.1, VI.2 and VI.3).

Since low rates of natural increase are now typical of all regions of Europe, since the probability seems to be that these rates will decline further and since, regionally and in the aggregate, Europe's growth is likely to continue to be determined primarily by the balance of births over deaths, diminishing growth is the pattern to be expected in the future. Net migration movements, particularly net emigration, may continue to be significant aspects of the total growth patterns of a few countries, as in the past, but as these movements are tending to be increasingly intracontinental rather than overseas they can be seen as having redistributive functions rather than as having an impact on the growth patterns of Europe as a whole.

The prospect, regarded here as probable, that Europe's rates of natural increase will decline, can best be assessed by examining birth and death rates separately. These are treated in detail in chapters III and V, where reasons will be given for anticipating that the rate of the decline in death rates is likely to slow down, and may even become negative.

Such anticipations with regard to both birth and death rates, it should be emphasized, are not yet borne out in any clear-cut fashion by the immediate past trends. In Europe as a whole, as well as in northern, western and southern Europe, the 1950-1970 decennial rates of natural increase have generally exceeded somewhat those of 1930-1950, while the highest post-war decennial growth rates, in the USSR and eastern Europe during the 1950s, were higher than any in these regions since the first decade of the century. Nevertheless, there is mounting evidence that these turnarounds have been cyclical-type phenomena which are now in process of being reversed. The 1950-1960 upsurges, in particular, appear to have been the compounded result of sharply declining death rates nearly everywhere following heavy wartime mortalities, accompanied by birth rates typically recovering from depression and war during the years 1930-1945. During the 1960s, the specific year depending on the area, and even more clearly since about 1970 almost everywhere, birth rates (along with more refined measures of fertility) have been moving downward sharply and, moreover, appear to be doing so by decisive margins (figure 1). It seems unlikely that they will recover in the coming decades to their 1950-1960 or even average 1950-1970 levels.

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[9] As cited earlier, current rates of increase in the low-income regions are averaging about two to three times this figure.

[10] See tables VI.1, VI.2 and VI.3 for an independent set of numerical estimates of natural increase and migration since 1950. Though the above conclusion about the relative size of each factor in growth in recent decades is clearly borne out there, the size of net migration may differ somewhat from that suggested by tables II.2 and II.3. Such variations, though as a rule involving small net movements, underscore the need to exercise caution in interpreting the data.

[11] It follows that they have been even smaller fractions of the growth percentages whenever these exceeded the rate of increase because of net in-migration (as in western Europe since 1950), though they become larger fractions under net out-migration (as in eastern and southern Europe throughout 1950-1970 and in northern Europe during part of this period).

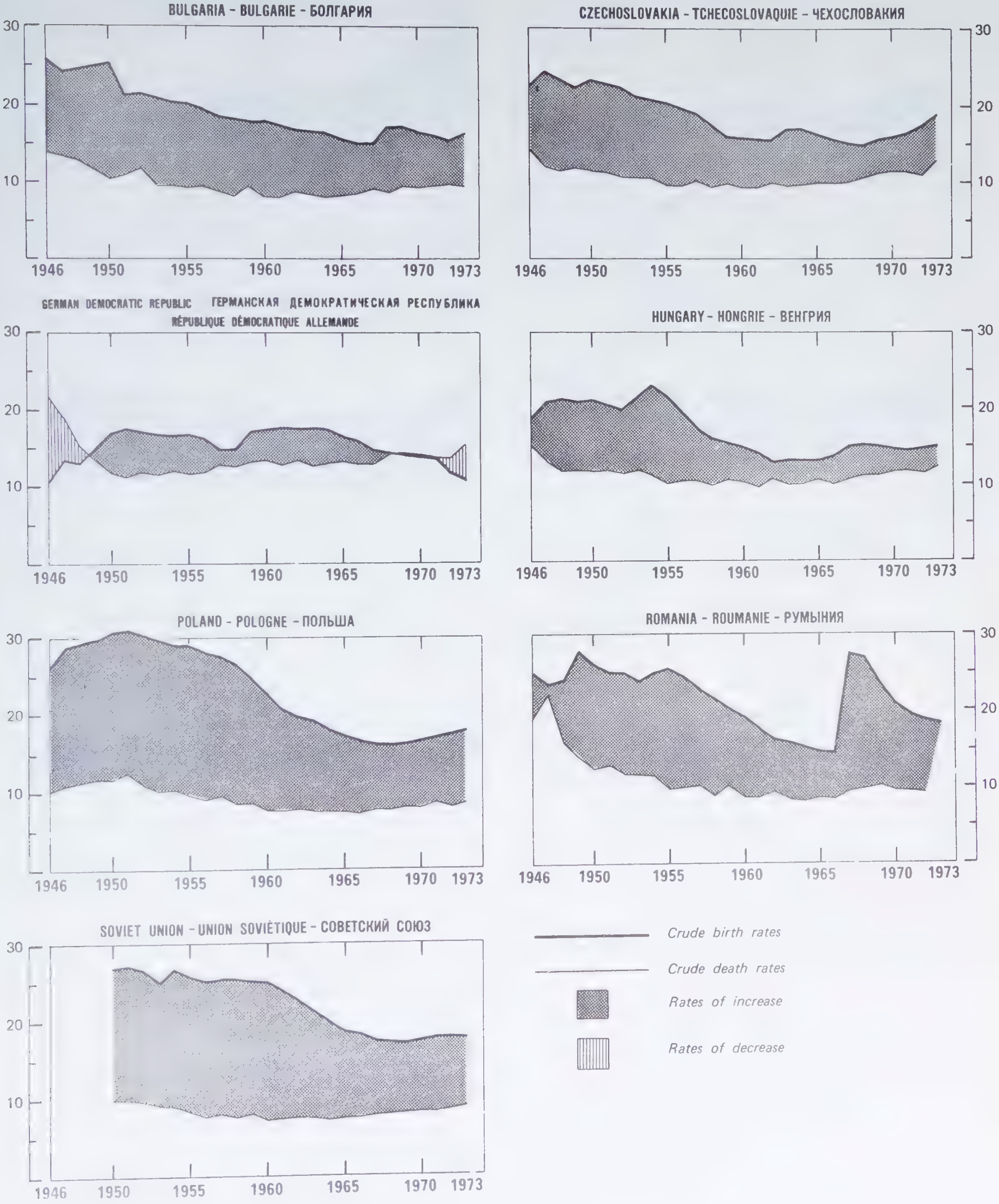


FIGURE 1

Crude birth rates, crude death rates and rates of natural increase of population, 1946-1973

(*Per 1,000 population*)

EASTERN EUROPE AND USSR

FIGURE 1 (*continued*)

Crude birth rates, crude death rates and rates of natural increase of population, 1946-1973

(*Per 1,000 population*)

NORTHERN EUROPE

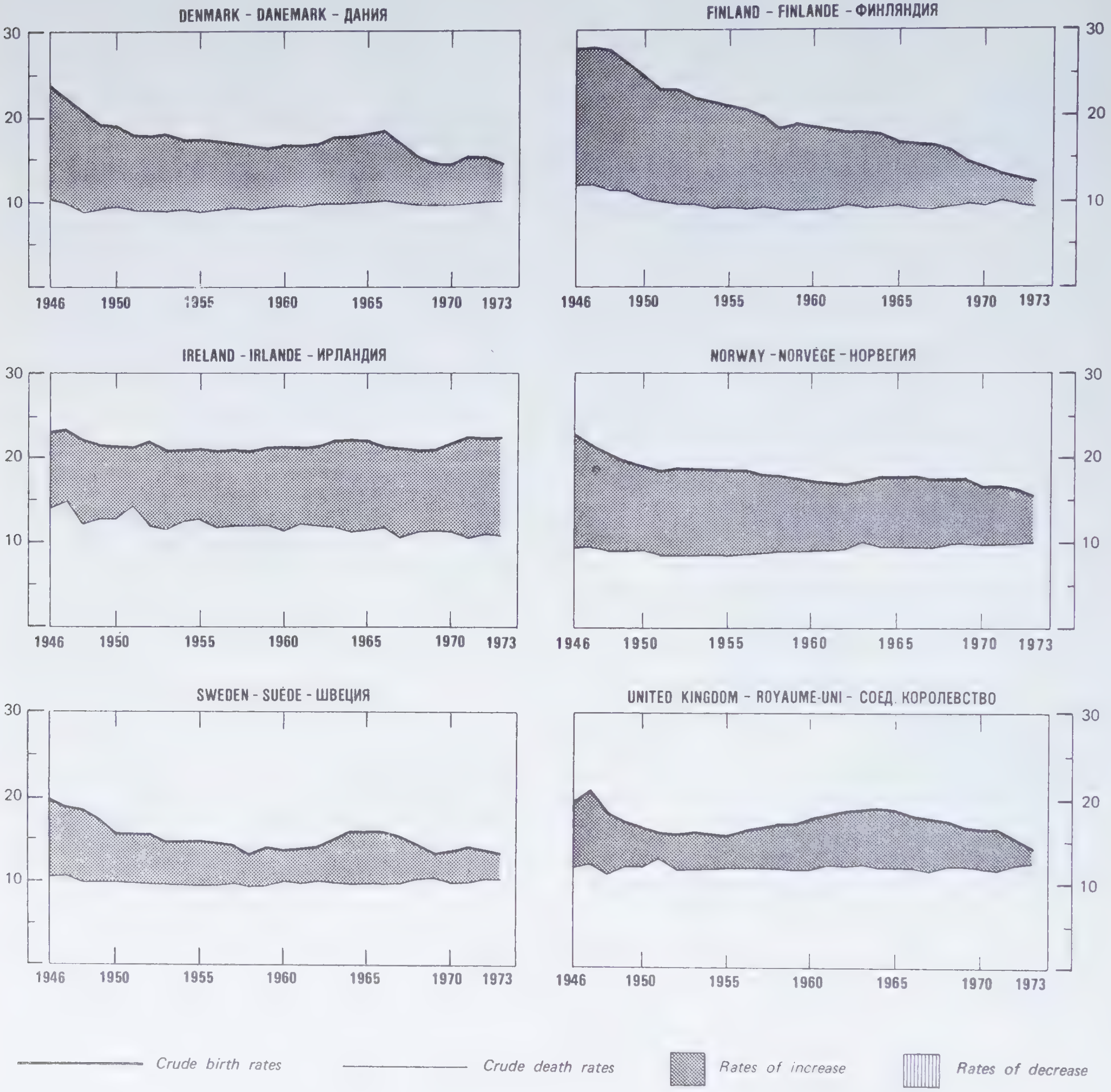


FIGURE 1 (*continued*)

Crude birth rates, crude death rates and rates of natural increase of population, 1946-1973

(*Per 1,000 population*)

WESTERN EUROPE

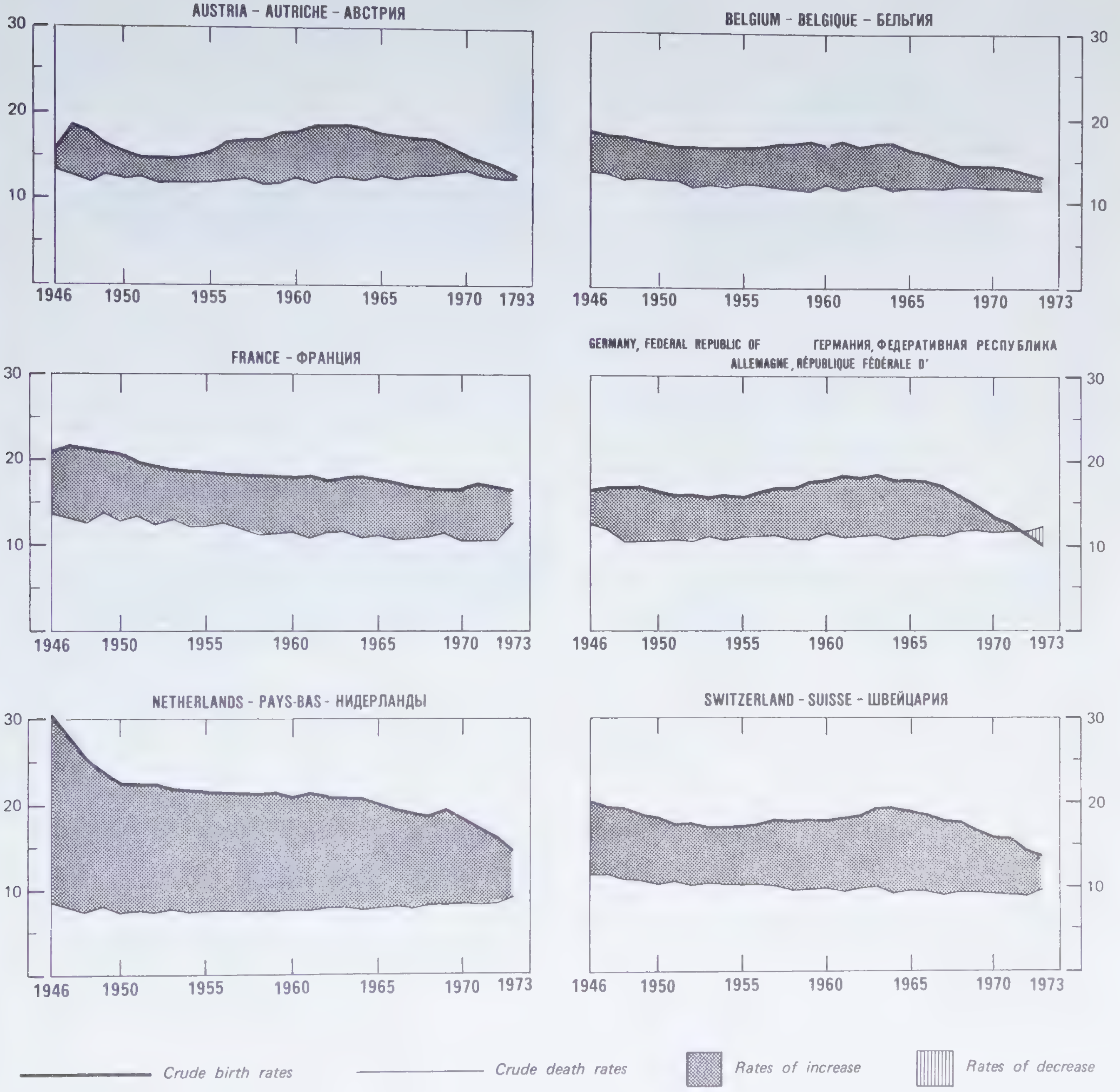
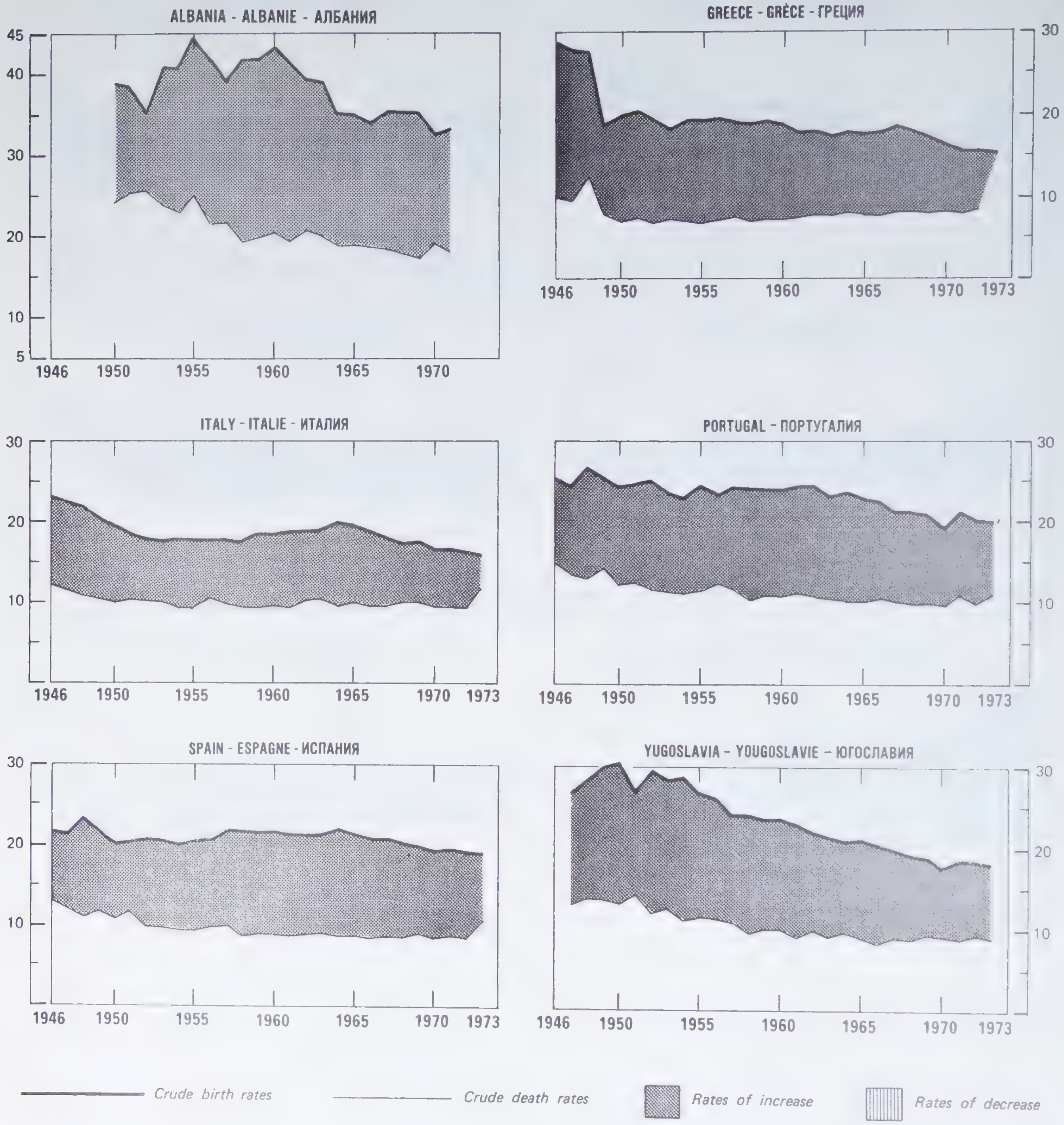


FIGURE 1 (*concluded*)

Crude birth rates, crude death rates, and rates of natural increase of population, 1946-1973

(*Per 1,000 population*)

SOUTHERN EUROPE



3. *Sex-age composition*

Related to Europe's growth, fertility and mortality, both as cause and effect, have been associated patterns of sex-age composition. Ratios of males to females, whether at individual ages or for all ages combined, are the outcome of the sex ratio of live births, male-female differentials in mortality and differentials in migration. Moreover, the levels of sex ratios by age can have significant effects on marriage and thereby on fertility, on aggregate mortality for males and females combined, and on migration probabilities.[12] Age structure, similarly, is the direct outcome of past levels and trends in fertility, mortality and migration, and in turn can have considerable influence on the crude rate of each of these components of change.

In addition to its inter-relations with vital-rate patterns, sex-age composition has impacts throughout the social structure, economy and political system. Education, labour force, family formation and household composition, private and public consumption, housing and non-housing investment and mobility propensities, for example, all are related in central ways to whether a population is on average young, already aged or ageing, or occupies an intermediate position along the age spectrum.

The distributions in table II.6 by age for either sex, and by sex for each of the indicated ages, indicate a number of salient general patterns, in addition to documenting a number of points of specific interest.[13] One striking pattern, the remarkably uniform sex ratio of about 104 to 105 males per 100 females for the pre-labour force ages of 0 to 15, is easily explained by the fact that the sex ratio of (live) births is highly uniform at a somewhat higher level (about 105 to 106) and can be only slightly modified before age 15 by lower female mortality rates, such as are found everywhere in Europe. A second striking uniformity, in all regions and periods, the steady decline of the sex ratio as a function of age—is the result of cumulative increasing differences between female and male survival rates with increasing age. Although the specific sequence of sex ratios with age in an area can also be modified by migration and the special influences of past wars, the clearly predominant factors are peacetime mortality differences. As suggested by the 1970 sex ratios for the 15 to 45 age interval, which in all regions were close to or somewhat above 100 as the after-effects of the Second World War waned, the surviving members of Europe's male and female birth cohorts tend to become equal in number at an age not far from 50 when demographic circumstances have been reasonably normal for some time.[14]

That the highest regional sex ratio of males per 100 females for the 15 to 44 age interval in recent years has been for western Europe, and the smallest for southern Europe, clearly reflects their opposing directions of net migration, but at the same time the relatively small range of regional values between about 100 and 105 suggests how limited such impact is likely to be. The very much greater effect of the Second World War on the 15 to 44 sex ratio is attested by its sharp increases in all regions between 1950 and 1960 and again between 1960 and 1970, as the male cohorts especially subject to wartime mortality passed increasingly into higher age intervals.

Similar signs of effects dating back to the First World War can be found in the rise between 1950 and 1960 in regional sex ratios for population between 45 and 59. Since a large fraction of the persons belonging to this interval as of 1950 were in the main ages of military service during 1914-1918, excess male mortality could be expected to drive the 1950 ratio below the relatively peacetime levels shown for 1960. In turn, since males aged 45 to 60 in 1960 were under-represented in the main military ages of the Second World War compared with the corresponding 1970 cohort, the ratio should have tended to fall between these years, and in fact does so.

Much the same type of explanation, involving main ages of military service, accounts for both the declines in the regional ratios for ages 60 to 74 between 1950 and 1960 and their ensuing rise in 1970, and further helps to account for the sharp declines in all regional ratios for persons aged 75 and over; thus the 1970 group aged 75 and over, being 20 and over about 1915, must have experienced much greater war losses than did the corresponding 1960 cohort, and the latter less again than the 1950 cohort.

Because of the variable intermixture of normal and special mortality factors affecting the sex ratios beyond age 15, their regional ranges of values have fluctuated erratically over the past quarter-century. In round terms, the ratios have varied from about 90 to 105 in the 15 to 44 age interval, from 85 to 95 for ages 45 to 59, 70 to 80 for ages 60 to 74, and 50 to 70 for the 75-and-over age category. Thus the ranges have been about 15, 10, 10 and 20 points, respectively.

The sex ratios by age in the USSR, for which only 1960 and 1970 data exist, are much like those for the other four regions for the under-15 group in both 1960 and 1970 (for reasons cited earlier) and again for the 15 to 45 group in 1970, but will be seen to be far below the range of European experience at higher ages.

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[12] Any birth, death, natural increase, migration or growth rate is easily shown to be a weighted average of corresponding age-specific (or sex-age specific) rates, each such rate being weighted by the proportion of total population in the given age (or sex-age) category. Birth rates tend to be much less affected than are death rates by age composition; conversely, fertility variations tend to have much greater effect on age structure than does mortality.

Composition by age (or sex-age) can in some instances also have significant if indirect effects on gross reproduction rates, such as are shown in table II.5. Although these measures are often described as structure-free, they can for example be raised or lowered substantially as a result of sex-ratio imbalances affecting the proportions married, hence affecting age-specific fertility rates even when marital fertility is constant. These points are developed further in chapters III and V.

[13] See appendix table A.II.1 for corresponding national distributions by more detailed age intervals.

[14] This is also borne out by the 1970 national life tables for European populations. In each documented case the number of female survivors of 100 births had caught up with the number of male survivors of 105 births between the ages of 45 and 55 years, with the mean such age being 50.

TABLE II.6

Age distribution by sex and sex ratios by age, in broad age groups, by region, about 1950, 1960 and 1970

(Age distributions in percentage, sex ratios are number of males per 100 females)

Age interval	Europe [a]			Eastern Europe			Northern Europe			Western Europe			Southern Europe [b]			USSR		
	Male	*Female*	*Sex ratio*	*Male*	*Female*	*Sex ratio*	*Male*	*Female*	*Sex ratio*	*Male*	*Female*	*Sex ratio*	*Male*	*Female*	*Sex ratio*	*Male*	*Female*	*Sex ratio*
1950																		
0-14	26.8	23.7	104.0	28.8	24.9	103.6	24.9	22.4	104.3	24.6	21.5	103.8	29.0	26.1	104.4	..	..	..
15-44	44.4	44.0	93.0	44.5	45.3	88.1	43.7	42.1	97.6	43.0	42.2	92.6	46.5	46.2	94.6	..	..	..
45-59	17.0	18.1	86.8	16.8	17.9	84.1	18.1	18.8	90.1	18.9	19.9	85.9	14.5	15.5	87.9	..	..	..
60-74	9.3	11.1	77.3	8.1	9.6	75.6	10.5	12.7	78.2	10.7	12.7	76.6	8.0	9.5	78.9	..	..	..
75 +	2.3	3.1	68.9	1.8	2.3	69.2	2.8	4.0	66.9	2.8	3.7	68.3	2.0	2.6	71.8	..	..	..
All ages[c]	100.0	100.0	92.0	100.0	100.0	89.6	100.0	100.0	94.0	100.0	100.0	90.8	100.0	100.0	94.1	..	..	..
1960																		
0-14	27.1	24.2	104.6	29.7	26.1	104.2	25.4	23.0	105.0	25.3	22.3	104.6	28.3	25.7	104.5	36.9	29.2	103.5
15-44	42.3	40.6	97.3	41.8	41.0	93.4	40.7	38.5	100.2	41.9	39.1	98.6	44.4	43.4	97.4	43.8	42.1	85.2
45-59	17.8	18.6	89.4	17.4	18.4	86.3	19.7	19.7	95.0	18.2	19.4	86.6	16.3	16.9	91.7	12.3	17.4	58.1
60-74	10.0	12.6	74.5	9.0	11.4	72.2	11.1	13.8	76.1	11.4	14.3	73.4	8.6	10.6	77.1	5.7	8.9	52.8
75+	2.7	4.0	62.7	2.1	3.0	63.6	3.1	5.0	59.5	3.2	4.8	61.3	2.4	3.4	67.3	1.3	2.4	30.4
All ages[c]	100.0	100.0	93.3	100.0	100.0	91.6	100.0	100.0	94.9	100.0	100.0	92.2	100.0	100.0	95.1	100.0	100.0	81.9
1970																		
0-14	26.0	23.5	104.7	25.9	23.2	104.8	25.5	23.2	105.2	25.3	22.6	104.6	27.2	24.8	104.5	34.2	28.2	103.8
15-44	43.8	40.6	102.1	45.9	42.7	100.8	40.6	37.9	102.7	43.8	39.0	105.1	44.2	42.3	99.5	46.3	40.9	96.7
45-59	15.8	17.0	87.3	14.7	16.5	83.1	18.2	18.2	95.3	15.3	17.1	83.9	15.5	16.6	89.4	11.2	16.1	59.6
60-74	11.6	14.1	77.6	11.2	13.7	76.8	12.5	15.0	79.7	12.4	15.6	74.8	10.4	12.2	81.0	6.9	11.8	50.1
75+	2.8	4.8	54.7	2.3	3.9	55.1	3.1	5.7	52.6	3.2	5.7	51.7	2.6	4.0	61.4	1.3	3.0	38.2
All ages[c]	100.0	100.0	94.5	100.0	100.0	93.8	100.0	100.0	95.6	100.0	100.0	93.6	100.0	100.0	95.3	100.0	100.0	85.5

Source: United Nations, *Demographic Yearbook*, various years.

[a] Excluding the USSR and Albania in 1970.

[b] Excluding Albania in 1970.

[c] Including unknown ages.

Although sex ratios for combined ages tend to be of less interest than their age-specific components, it is worth noting that, outside the USSR, they have recently varied within a fairly narrow range, about 90 to 95 throughout the post-war period. Moreover, they have simultaneously been rising over time within each region and converging between regions, because increasingly normal peacetime mortality rates are exerting their influence in all parts of the continent; the erosion of wartime effects now affects mainly the groups aged 60 and over. The USSR, though continuing to exhibit far lower over-all ratios during both 1960 and 1970 than did the four other regions, nevertheless has shown a clear tendency during the 1960s to approach the European pattern.

With respect to age composition, Europe has experienced a marked ageing trend in recent decades, in all regions the proportion aged 60 and over increasing from a 10 to 15 percentage range of values to one of nearly 15 to 20 per cent. Considering that the sharp post-war rise in fertility would have tended to move Europe's age distributions towards a younger age, the tendency to rising proportions of aged is all the more striking. For Europe as a whole (excluding the USSR) the rise during 1950-1970 in the 60-and-over group was from about 14 to nearly 19 per cent, while for males it was from less than 12 to over 14 per cent.[15] Every region, including the USSR, saw the proportion rise during both the 1950s and 1960s. Had these older age groups not been depleted by war losses, the increases would have been even higher, especially in the USSR.

At the same time, however, the east and south have remained in clear and consistent contrast with the north and west. Both the similarities and the marked differences between these two pairs of regions can be traced back largely to the timing and extent of their long-term regional trends in fertility.[16]

At the opposite or younger end of the age scale, Europe's regional proportions under 15 can be connected with fertility patterns in two major ways. Over time, the decennial increases and decreases found in table II.6 can be closely correlated with fertility uptrends and downtrends, respectively, during different parts of the post-war era. Over space, the proportions found in the east and south have tended to be notably similar to each other throughout the period and considerably above northern and southern levels until 1970. The 1970 break in the east with this comparative pattern is explained by the fact that fertility dropped sharply in a number of its populations. Should the present strong tendency towards converging levels of regional fertility continue, all regional contrasts of the past could well disappear or even become reversed. Only the USSR, with its very substantially higher proportions under age 15, shows signs of remaining for some time a much younger population than the remainder of Europe.

Since the proportions under 15 years of age plus those aged 60 and over have been close to 40 per cent in all regions throughout the post-war period, it follows that the proportions in the main labour force ages have uniformly remained about 60 per cent. Considering each sex separately, the lowest proportions aged 15 to 59 shown in table II.6 are above 55 per cent (males in the USSR in 1960 and females in both northern and western Europe in 1970) and the highest below 65 per cent (eastern Europe in 1950). However, since any shift in the proportions aged 15-59 must be accompanied by an opposite shift in the remaining ages, their combined effects sometimes can lead to rather substantial changes over time. In northern Europe, the ratio rose by about eight percentage points for males (about 0.60 to 0.70) and 14 points for females (about 0.65 to 0.80); in western Europe, the corresponding increases have been roughly comparable.[17] Eastern and southern Europe show only limited increases in the dependency ratio for males, but a significant rise for females.

Over-all age-dependency levels depend on the numbers of both the young and the old dependants. Over time, these numbers (and consequently also their proportions in the total population) may move in the same direction, in which case they have a cumulative effect on dependency, or they may move in opposite directions, offsetting one another in their impact on the dependency levels.

In the post-war European experience there has been a tendency for the age-dependency burden to increase, due mainly to the predominant impact of ageing, even in the cases—particularly pronounced in eastern Europe and the USSR in the 1960s—where the old-age dependency was to a certain extent offset by a decline in the dependency burden of the young. It should be borne in mind, however, that the social and economic consequences of changes in the dependency ratio are quite different depending on their actual casual patterns.

Turning to the structure of age ratios within the 15-59 age interval itself, it is of interest to consider the ratio of persons 15 to 44 to those 45 to 59 in order to distinguish the younger and older members of the labour force. Table II.6 shows that the younger group has tended very generally to be between two to three times the older age group during the post-war years, with the lowest ratios in the north and the highest in the south. Only the USSR, for males alone, provides an example of a ratio well above three to one, and no region in the post-war era has gone below two to one.

As to changes in this ratio over time, practically all regions showed a decline in 1950-1960 followed by a rise in 1960-1970. The earlier decline in particular was associated with falling fractions everywhere in the numbers in the age groups 15-29 which, being also the main female reproductive ages, has had special importance for regional trends in the birth rate, as discussed along with other causal factors in chapter V.

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[15] See also chapter VII for a discussion of the rapidly rising numbers of older people foreseen to the end of the century according to recent national projections.

[16] Male-female variations in the proportions aged 60 and over, which are more closely related to mortality, help explain the striking sex differentials in widowhood to be found in all regions at the upper ages, as discussed in chapter IV.

[17] All references to dependency ratios can be deduced from table II.6 by relating the proportion under 15 plus that aged 60 and over to the proportion between 15 and 59. Use of other frequently encountered definitions of dependency ages, such as those under 20 and over 65, would have led to much the same conclusions.

A more detailed analysis of changes over the 20-year period under study and of the inter-country differences in the age and sex composition of the population can be made by examining the data illustrated in figure 2. They show percentages of men and women of a given age group (in 5-year intervals) in relation to total population, for 16 selected countries (four in each region of Europe). In each case the darkened area refers to the base year, i.e. to the situation prevailing around 1950.

A general tendency can be noted for the age-pyramids to change from a Christmas tree shape to one more resembling a barrel. This is particularly true of the lower parts of the pyramids, which have been affected by declining fertility, and is especially noticeable in the areas where populations were still relatively young around the year 1950, i.e. those in the southern region and in some countries of eastern Europe. A general feature has also been a widening at the top of the pyramids, due to ageing, usually more pronounced on the right hand side of the pyramids, i.e. among women. It will be shown in chapter VII below that such tendencies will become even more accentuated in the later decades of this century.

4. *Internal distribution*

A chapter on structural changes in European populations would not be complete without at least some reference to the urbanization process. It needs to be stated at once, however, that the quality of data available for measuring progress of urbanization is very uneven in the various parts of Europe. Moreover, changes over time and inter-country differences in the definition of urban and rural populations distort the significance of temporal and spatial comparisons. For these reasons the data put together in table II.7 should be regarded as only broadly indicative of trends and patterns. These could be summarized as follows: During the 20-year period under review, population defined as urban rose by about 50 per cent in Europe as a whole (excluding the USSR) and by about 100 per cent in the USSR. The smallest increase, about 20 per cent, occurred in northern Europe, where the degree of urbanization was apparently the highest at the beginning of the period. It seems that, generally, the pace of urbanization slowed down somewhat in the 1960s compared with the 1950s, particularly so in the USSR and in Northern Europe. As shown in the middle section of table II.7, urban population grew more than twice as fast as the total population in Europe as a whole, this ratio rising to a multiple of nearly 3 in eastern Europe and the USSR and to more than 3 in southern Europe. As a result of these differential rates of growth, the share of the urban population rose everywhere during the period studied, and by 1970 reached about three-fourths of the total population of northern and western Europe and about one-half of that in the remaining regions and in the USSR.

Spatial distribution can also be studied by considering population patterns according to the number of inhabitants or locality size. Though occasionally reduced in value by gaps in coverage and by unevenly detailed reporting, the data have the great advantage over urban-rural distributions of being based upon more uniform definitions.[18]

TABLE II.7

Urbanization in Europe, by region, 1950-1970[a]

	Percentage increase in urban population			*Increase in urban population as index of increase in total population* (Increase in total population = 100)			*Urban population as percentage of total population about*		
Region	*1950-1960*	*1960-1070*	*1950-1970*	*1950-1960*	*1960-1970*	*1950-1970*	*1950*	*1960*	*1970*
Eastern Europe	23	22	50	256	297	292	43	48	54
Northern Europe	13	5	19	141	173	168	70	73	75
Western Europe	18	20	42	142	198	171	66	69	76
Southern Europe	28	28	63	317	341	357	35	42	49
Total Europe[b]	20	18	42	196	239	227	53	58	63
USSR	49	31	96	259	227	271	39	49	56

[a] As a rule, national definitions of urban population were accepted. For some countries, in order to complete the sub-regional totals, rough estimates of urban population were made either by reference to the data on population by locality size (urban localities being defined as those with more than around 2,000 inhabitants) or by linear inter- or extra-polation.

[b] Excluding the USSR.

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[18] An approximate indicative relation between the two distributions can be obtained by identifying localities with populations over 2,000 as urban and all remaining areas as rural, but from sociological, economic or other functional points of view, the situation may be much more complicated. See the discussion of these and related conceptual issues in United Nations, *Growth of the world's urban and rural population, 1920-2000*, Population Studies, No. 44 (United Nations publication, Sales No. 69.XIII.3).

For the most recent compilation of European definitions of urban, see *Demographic Yearbook 1971* (United Nations publication, Sales No. E/F.72.XIII.1), p. 157. A review of the data on the European urban/rural distributions presently available made evident their disadvantages. At the same time, the data on localities are also far from free of ambiguity. Locality itself may be defined according to any one of several approaches, which may shift over time within countries as well as vary over space between countries. The three approaches in common use are documented for the national locality-size distributions shown in appendix table A.II.2.

FIGURE 2

Population by age and sex in 16 countries of Europe, about 1950 and 1970

(Percentages of total populations in a given year: the shaded area refers to the base year)

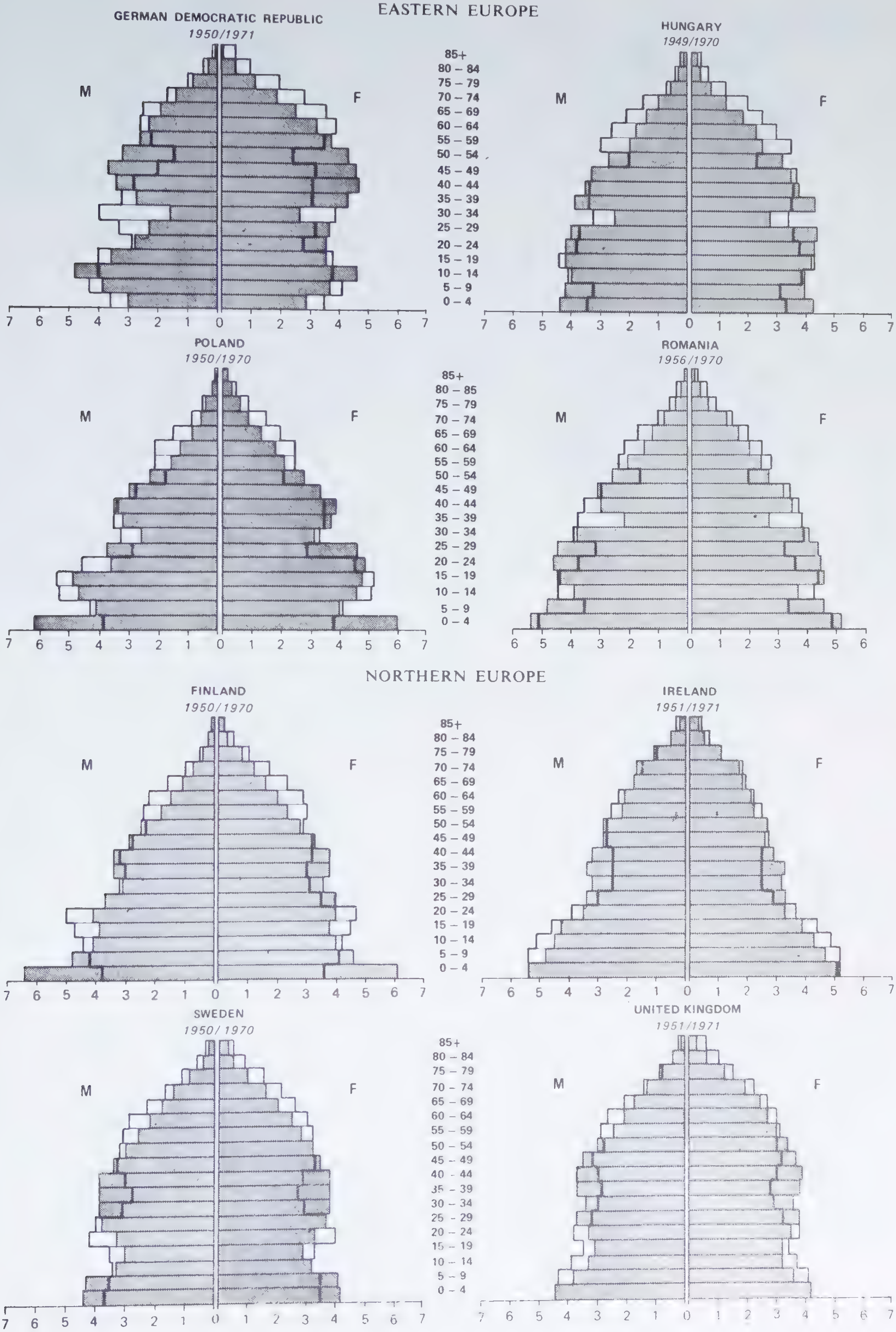
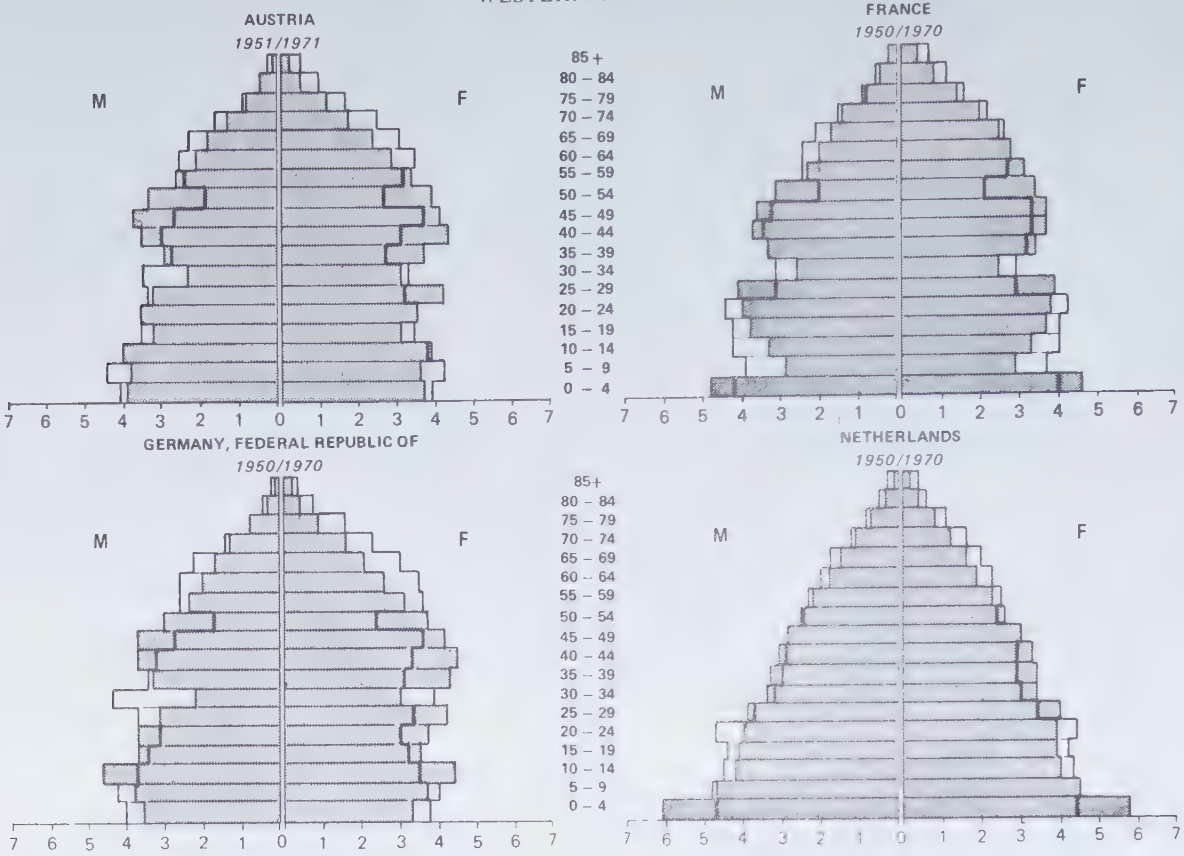
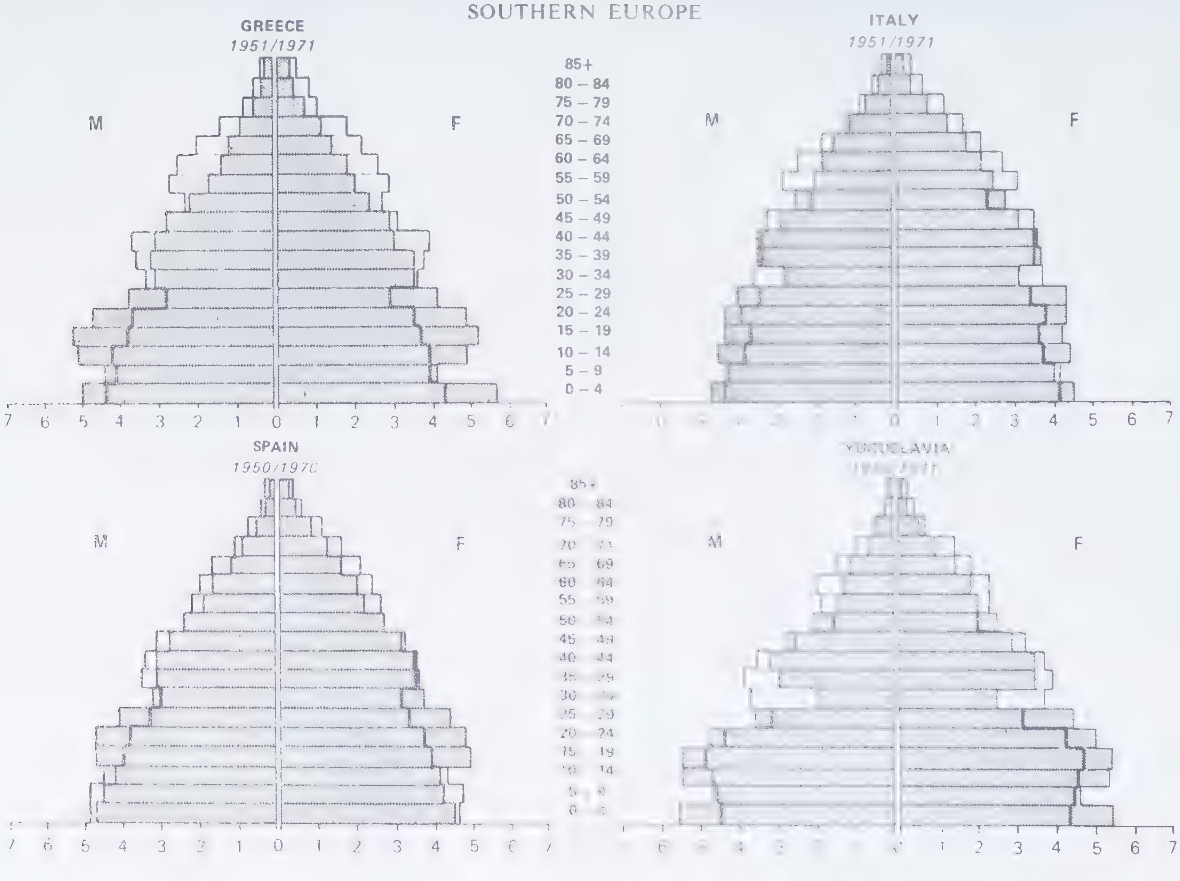


FIGURE 2 (*continued*)

WESTERN EUROPE



SOUTHERN EUROPE



The locality-size distributions shown in table II.8 and appendix table A.II.2, despite their limitations, confirm the force and universalism of Europe's urbanizing processes over the post-war decades. The eastern, northern, western and southern regions all experienced marked increases in the percentages living in localities of 2,000 or more inhabitants during both the 1950s and 1960s, while the USSR during the latter decade (the only one for which information exists) showed a similarly pronounced tendency. The percentages of populations in urban areas with 20,000 or more inhabitants also moved up markedly everywhere during the 1960s, except in eastern Europe, where it may have increased or stayed essentially the same.[19] An analogous modal tendency can be observed to hold for the metropolitan-size areas of 100,000-plus.[20]

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[19] Judging from earlier national trends, the real 1960-1970 trend in eastern Europe may be found also to have been perceptibly upward, once the information for omitted countries becomes known. The small apparent rise for Europe as a whole during the 1960s is also affected by incomplete data.

[20] The main exception, involving a small decline in the 100,000-plus percentage for total Europe during the 1960s, is partly statistical because of the exclusion of several large populations (in particular England and Wales and France) for which detailed data were not available.

TABLE II.8

Locality-size distribution of population, by region, about 1950, 1960 and 1970

(*Percentages*)

Region and year	*Total*	*Over 100,000*	*50,000 to 100,000*	*20,000 to 50,000*	*10,000 to 20,000*	*5,000 to 10,000*	*2,000 to 5,000*	*Under 2,000*	*Other*[a]
Eastern Europe									
1950[b]	100.0	10.8	4.0	6.4	5.5	6.1	11.1	27.7	28.4
1960[c]	100.0	23.2	5.3	8.2	7.1	9.1	17.1	17.9	12.1
1970[d]	100.0	20.2	5.4	10.5	7.4	10.9	25.2	20.4	. .
Northern Europe									
1950	100.0	41.2	6.3	10.0	6.7	4.9	6.0	10.0	14.9
1960[e]	100.0	46.1	13.4	13.4	6.7	3.4	2.4	3.0	11.6
1970[f]	100.0	. .	. .	. .	. .	. .	. .	. .	. .
Western Europe									
1950	100.0	22.7	5.6	9.0	7.5	9.0	13.9	31.4	0.9
1960	100.0	24.9	6.6	10.7	8.4	9.4	12.9	26.1	1.0
1970[g]	100.0	28.7	6.4	11.9	10.3	10.6	13.4	18.8	. .
Southern Europe									
1950	100.0	18.1	5.5	10.1	10.7	12.9	14.3	10.6	17.8
1960[h]	100.0	22.9	6.7	10.9	10.2	12.6	14.7	21.6	0.4
1970[i]	100.0	28.3	6.9	13.1	10.5	11.7	13.0	16.5	. .
Total Europe[j]									
1950	100.0	22.6	5.4	9.0	7.9	8.7	11.9	20.5	14.0
1960	100 0	27.4	7.4	10.5	8.2	9.2	12.8	18.9	5.6
1970	100.0	26.7[k]	6.5	12.0	9.6	10.7	15.2	17.7	1.6[l]
USSR[m]									
1960	100.0	23.3	5.3	7.1	5.3	4.4	1.7[n]	0.8	52.1
1970	100.0	31.2	5.4	7.6	5.3	4.2	1.7[n]	0.8	43.8

Source: United Nations, *Demographic Yearbook*, various years.

[a] Including remaining areas, if any, plus unknown cases.

[b] Excluding Hungary, with limited effect on distribution.

[c] Excluding Bulgaria, with limited effect on distribution. Allocation of population between the under-2,000 and remaining categories in Romania may have changed between 1950 and 1960.

[d] Excluding Czechoslovakia and Poland, with probably significant effect on some percentages, such as the 2,000-5,000 category.

[e] Excluding Finland, with limited effect on distribution. Estimates may be distorted by treatment of data for England and Wales, which changed system for identifying localities between 1950 and 1960. See *Demographic Yearbook 1955* and *1962* (United Nations publications, Sales Nos. 55.XIII.6 and 63.XIII.1)

[f] Distribution for Denmark, Ireland, Sweden and Northern Ireland combined was 28.1, 7.9, 10.0, 7.4, 4.8, 6.4, 10.7 and 24.7 for indicated size categories, respectively. Unavailability of data for England and Wales made regional estimation impossible.

[g] Excluding France and the Netherlands. Distribution by broader size intervals with France included was as follows: 34.1 per cent for 100,000 and over; 14.8 per cent for 20,000-50,000; 24.5 per cent for 2,000-20,000; 26.6 per cent for the remainder.

[h] Excluding Portugal, with limited effect on distribution.

[i] Excluding Greece and Portugal, with probably limited effect on distribution.

[j] Excluding the USSR and specific other areas by year as noted above.

[k] With France included, percentage is 28.2.

[l] May be biased by omission of a number of countries, especially England and Wales.

[m] Data for 1950 not available.

[n] Interval is 3,000-5,000.

Reflecting the strength of the trends everywhere, high-low differences at both extremes of the regional locality-size distributions have become greatly narrowed. In 1950, the percentage of populations living in localities of over 2,000 was 20-25 points higher in the north than in the east. In 1970, the high-low difference may well be no more than 10 points, though it is not yet known precisely. Similarly in the 100,000-plus category, such differences have narrowed from about 30 points in 1950 to under 25 in 1960 and to probably under 10 points at present.

In 1960 in the USSR, the percentage of the population in localities of 100,000 inhabitants or more was about the same as the figure for eastern and southern Europe, but was below that for western Europe and far below that for northern Europe. On average, therefore, it was only several points below the percentage for the remainder of Europe combined. In contrast, the percentage living outside 2,000-plus localities in the USSR has appeared to be consistently far higher than the levels found everywhere else on the continent. Whether the available 1960 and 1970 comparisons reflect mainly definitional variations or actual conditions is unknown. So far as can be seen from the data at hand, however, the contrasts with most other regions have been especially marked in the 2,000-5,000 and 5,000-10,000 ranges of locality size.

In 1950, approximately two-thirds of Europe's population (outside the USSR) lived in localities of 2,000-plus and the remaining one-third in smaller localities or open country. By 1970 the proportions had shifted markedly to four-fifths and one-fifth, hence from a 2-to-1 ratio to a 4-to-1 relationship. In localities of 20,000-plus, the corresponding shifts were from about one-third of the population to nearly one-half, hence from a 1-to-2 to a nearly 1-to-1 ratio.

These orders of magnitude, despite their impressive nature, surely understate the situation in functional terms. Undoubtedly, concomitant changes in transportation, communications, mobility and education—to name only a few main factors—have in fact propelled Europe to far greater degrees of urbanization than is suggested in the best available data. Ruralism as either life style or source of livelihood is still a substantial component of Europe's social scene, but the time when it will give way almost entirely to urban-type systems appears not far distant.

C. Summary and conclusions

Europe's demographic trends since 1950, although deeply rooted in long-standing antecedents, are now undergoing major changes which must have major implications for the remainder of this century. Mortality nearly everywhere is at a point today where further large declines in death rates are highly unlikely, if not close to impossible to achieve. Fertility has converged through most of the continent to such low levels that, though still declining as a rule, it seems reasonable to assume that it must soon start levelling off unless major population declines are to be the long-term consequences. In terms of future potential for natural increase, therefore, Europe today (including the USSR) is far more homogeneous than at any time for at least two centuries. Both separately and in the aggregate, all major regions in the continent may be approaching fertility and mortality levels that will ultimately bring on an approximate balance of births and deaths, with negative balances far from unlikely in individual countries. Net immigration can provide a considerable source of growth under special circumstances, as it did for western Europe during the 1960s, but cannot be expected to do so indefinitely. In the long term, natural increase is almost certain to be decisive not only for Europe and its regions but for very nearly all countries individually.

It follows that the major shift from high to low vital rates throughout the continent, which has been perhaps the outstanding feature of the post-1950 decades, will have to be modified if past rates of population growth in Europe are to be even approximately maintained. Given presently foreseeable fertility and mortality trends, however, a long-term prognosis of creeping growth or even non-growth seems more probable than continued growth around present levels for most countries and regions and for Europe as a whole. However, for most countries and for all regions, the age structures are still weighted in favour of growth and this momentum seems likely to prevent the early onset of population decline in all but a few countries for the rest of this century.

Europe's sex-age structure during the post-war decades has been increasingly determined by ordinary fertility and mortality trends, but it has also been significantly altered in predictable ways by special events. Outstanding among the influences of normal trends have been the rapid growth of Europe's aged population and the pronounced declines in sex ratios with rising age, contributing to a steady deterioration in the age-dependency ratios. Special effects, such as those caused by major wars, are reflected no less clearly in Europe's age distributions, particularly at older ages.

Urbanization, although difficult to measure statistically and often incompletely documented, can be clearly identified as having continued at a rapid rate in all parts of the continent. Metropolitan-size urban communities of 100,000 and more inhabitants, and also the relatively non-urban population living outside of localities of 2,000-plus persons, have shown rapid convergence regionally in terms of relative size, with the former increasing and the latter declining. The USSR since 1960, while similar to a number of other regions in its proportion of population living in cities of 100,000 or more inhabitants, appears also to show far higher proportions living in rural-type localities than do other regions, though precise measurement of this phenomenon is difficult.

What is clear, however, is that Europe as a whole and all of its major regions are rapidly approaching a stage of almost total urbanization, if not in residential patterns as such, then at least in socio-economic functional terms.

Chapter III

MORTALITY

A. Introduction

The post-war decades may well have witnessed the end of an historic era in European mortality patterns and trends. Past gains in length of life can no longer be duplicated as a result of further declines in infant mortality and in mortality up to the middle adult years, the main sources of such declines for over a century. Unless revolutionary declines occur in upper-age mortality, indeed well beyond any registered in any earlier periods, future gains in all parts of the continent will necessarily be fractions of those encountered during the past 20 to 40 years.

Moreover, the aggregate prospects require only limited qualification to be applied to individual areas. As a result of powerful processes of international convergence since the Second World War, European mortality is more homogeneous than ever before in recorded history. Although eastern and southern Europe still lag behind northern and western Europe in significant respects, present differences appear more likely to diminish than to increase in the near future as the higher-mortality areas continue to catch up with the areas whose populations have a mortality rate too close to zero to permit further large gains.

A further break with the past concerns the effects of mortality trends on age structure. Previously, such trends have tended to reduce the average age of a population, by increasing the proportion of persons under the age of 15 and diminishing the proportion in the 15-49 age group. In future, given the boundary effects resulting from near-zero mortality at the younger ages, any substantial further gains in longevity will be far more likely to raise than to lower average age, since they will have to stem from declines in mortality rates at the later ages of life. Such declines, when larger than those for the childhood years, tend to increase the fraction of aged in the population and might well do so in historically unique degrees.

Past trends in European mortality have tended to have only limited effects on age composition, as the declines have been distributed over many ages, although the main concentration has been in the first years of life. Future trends, if increasingly focused on the ages above 50, might change not only the direction of effects, compared with the past 100-150 years, but also their magnitudes.

For the first time in Europe's modern demographic history, at least as recorded during peacetime, a potential for increased mortality may be developing for major sectors in some populations. Indications during the 1960s were that mortality among middle-aged or older males may be beginning to rise or fluctuate in a number of countries. Similar tendencies could be in store for older females as well, judging from some trend developments. Although the signs at hand are scattered and inconclusive, they merit attention as possibly being more than merely transient aberrations. Were they to persist and multiply as they have for males, they could constitute the first significant reversal of mortality downtrends in Europe in over a century.

Occurring along with the recent appearance of major new developments within Europe itself has been the onset of new comparative patterns with the rest of the world. While the low-mortality, higher-income populations outside of Europe continue to resemble closely northern and western Europe, much as has been the case for decades, large parts of South America and Asia, as well as some parts of Africa, have come to occupy a position radically different from the past. As a result of enormously rapid mortality declines in many newly developing countries during recent years, not a few have reached levels similar to parts of eastern and southern Europe today, which themselves are beyond the levels reached in northern and western Europe during the 1930s. Only a quarter of a century or so ago, about the end of the Second World War, nearly all of Latin America, Asia and Africa were still, as far as mortality is concerned, at the stage which northern and western Europe reached over a century ago.

Contemporary mortality in Europe also shows significant continuities with the past, in addition to the major transitions or discontinuities. The scope for further declines in mortality at the younger ages is still considerable in some parts of Europe. Intra-regional as well as inter-regional differences are still clearly discernible at all ages, often involving substantial numbers of populations rather than being merely isolated instances. The gap between female and male mortality, which has been widening persistently for a half-century everywhere in Europe, shows no signs of abating. Whether the recent signs of possible reversals in some mortality trends prove to be long-lasting or merely ephemeral remains to be seen.

Internationally, major differences between Europe and the developing regions will undoubtedly continue to endure. A substantial fraction of the population of the third world, particularly in Africa, is probably less advanced in mortality terms today than were northern or western Europe 100 years ago and a much larger proportion still lags behind much of Europe by more than 50 years. With respect to the low-mortality areas outside of Europe, the long-standing situation of small differentials compared with much of the continent seems certain to continue.

In short, marked major similarities with the past are no less abundant than dissimilarities, even if the latter prove to be as revolutionary in fact as they are in prospect.

Supporting details, together with some needed qualifications are presented in sections B to F of this chapter. The first four sections deal, successively, with recent levels and trends in over-all mortality, age-specific characteristics, sex differentials and causes of death. A concluding section deals with prospects and some future perspectives.

Practically all of the data used below were obtained from official documents of the United Nations or WHO. In some instances where estimates were needed and could be made with small risk of major errors, measures which are derived rather than directly reported have been used.

As a rule, European mortality statistics are among the best in the world. However, the quality of the data may vary significantly by age, over time and among regions. In particular, the series for some countries in southern Europe seem open to question, while documentation for the war and immediate post-war years is often incomplete, of uncertain reliability, or both. Young-age and upper-age measures need sometimes to be treated with special caution in a number of areas and/or periods.

B. Recent levels and trends

1. *Life expectancy*

European mortality has declined to the point where length of life has gone clearly beyond the 70-year mark for the continent as a whole and most of its parts (table III.1).[1] As of about 1970, regional average figures for length of life (males and females combined) were around the 70 to 73 years range, with eastern Europe and the northern populations at the extremes.[2] National levels varied from 67 to 68 years in Albania, Portugal, Romania and Yugoslavia, to almost 75 years in Sweden. Half or more of the countries in eastern and southern Europe, and probably every country in northern and western Europe, had gone beyond 70 years (appendix table A.III.1). Moreover, available estimates suggest that most subsequent movements in total longevity have been more probably upward than downward since 1970.

Two additional aspects especially stand out in the recent trends. One has been the pronounced and persistent tendency towards narrowed differences among regions (table III.1). Because length of life in the higher-mortality regions of eastern and southern Europe increased about twice as rapidly as in northern and western Europe in both the 1950s and 1960s, the high-low regional differences (involving northern and eastern Europe in each case) fell from approximately 8.5 years in 1950 to 3.5 years in 1960 and again to 2.5 in 1970. Similarly, for individual countries, for which the range is somewhat obscured by gaps in the data, the high-low spread appears to have fallen by about half during the 1950s and by another fifth during the 1960s. Other measures of change in international variability lead to the same conclusion, while longer-term series suggest that such variability has recently reached the lowest point for this century.[3] It is clear in any case that the narrowing of differences in mortality levels throughout Europe represents a remarkable process of convergence of major social forces, perhaps as striking as any to be found in the continent's recent history.

A striking outcome of the recent processes is that Europe's differences in length of life between regions and between countries have typically become far smaller than the differences to be found between males and females. Involved here, in addition to convergence, has been a no less striking tendency, documented below, for female-male differences to rise steadily throughout the past half-century.

A second salient aspect of the 1950-1970 trends has been their extremely rapid rate of deceleration. Gains in total longevity in northern and southern Europe during the 1960s were less than half those of the 1950s, while in eastern and western Europe the ratio was less than one-third. In the USSR, the more recent gain appears to have been below one-fifth of the earlier change, and for total Europe excluding the USSR the drop was to below a one-to-three ratio.[4]

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[1] Measures of expectation of life at birth have numerous advantages for describing over-all mortality. These include the following: (*a*) such measures make use of mortality rates at all ages; (*b*) they are unaffected by age structure; (*c*) being often the result of extended actuarial investigation, they may reflect attempts to adjust for errors in the underlying series on population and deaths by age; (*d*) they tend to be little affected by errors at the advanced ages, which often—because of reporting inadequacies or small numbers of cases—exceed the scale of errors at younger ages (though it is true that they are relatively sensitive to inaccuracies in infant mortality rates, which are also frequently large); (*e*) reasonably reliable estimates (through the use of various direct and indirect methods) are available for many more areas than can be similarly well documented by alternative indicators, such as crude or standardized death rates and infant mortality rates.

The terms "length of life" and "total longevity" will be used here synonymously with "expectation of life at birth". For other ages, such as 30 or 65 below, the terms "expectation of life" and "life expectancy" will be used interchangeably.

All cited measures are from life tables for calendar periods. Such tables present the record of survival and mortality between birth and extinction of a hypothetical cohort subject to the sequence of age-specific mortality rates found during a given calendar period among different actual age cohorts. So-called cohort or generation life tables, which summarize similarly the vital history of actual birth cohorts traced over time, could not be used in view of data limitations.

[2] Regions as used throughout this chapter are defined according to the list of countries shown in chapter I, foot-note 2.

All averages are weighted, unless otherwise noted. Comparison of weighted and unweighted averages shows that the two tend to be close enough to leave regional patterns unaltered.

[3] For example, the standard deviations of the 1970 national distributions of expectation of life at birth are less than half those for 1950 and the latter are considerably below those for 1900. Coefficients of variation, or the ratio of standard deviation to mean, would show an even sharper decline, since the declining numerator values are accompanied by rising denominator figures.

[4] The novelty of the indicated decelerations is underscored by the sharply contrasting patterns of earlier trends. In the past, the increase in longevity in Europe has often accelerated, even after prolonged periods of previous gains. For example, the increases

TABLE III.1

Male and female expectation of life at birth, by region, about 1950, 1960 and 1970

(*Weighted averages*)

Region	1950		1960		1970	
	Males	Females	Males	Females	Males	Females
Eastern Europe	58.6	63.1	65.7	70.5	66.8	72.7
Northern Europe	66.8	71.0	68.5	73.8	69.1	75.3
Western Europe	64.5	69.0	67.4	73.0	68.4	75.1
Southern Europe	60.4	64.1	65.9	70.5	67.8	73.4
Total[a]	62.5	66.8	66.8	71.9	68.0	74.1
USSR	58.2	63.3	65.0	72.6	66.0	74.0

Sources: United Nations, *Demographic Yearbook*, various years. WHO, data bank. Official communications.

[a] Excluding the USSR.

At the national level, every country in eastern, western and northern Europe appears to have experienced a slowdown in trend, as a rule in sharply decelerating fashion. Only in northern Europe, where a number of areas such as Denmark, Norway and Sweden have had very limited gains during both decades, are exceptions encountered. In each of these instances, the dominant reason by far is the slow rate of improvement during the 1950s, rather than the magnitude of the accelerating tendencies in the 1960s.

Since the relatively low-mortality countries of northern Europe have often anticipated the trends elsewhere, it may well be that future gains in other areas will follow an erratically fluctuating path, rather than a steady decline, so long as the changes remain small. Significant modification of this prospect would be likely only if the scope for changes were to expand greatly at higher ages, where most deaths now occur, or if life expectancy began to fluctuate in downward as well as upward directions by large amounts.

The essential reason for the deceleration of the 1960s, as will be documented below, has been the onset of an increasingly dominant ceiling effect throughout the continent: compared with past experience, the maximum gains in length of life still possible as a result of mortality declines at younger ages have become sharply reduced. This new prospect is likely to have major, and as yet largely unexplored, social consequences.

2. *Crude death rates*

An important by-product of the converging and decelerating tendencies just noted is the inadequacy of European crude death rates for making intra-continental comparisons at present. Since this measure is the most widely and readily available statistic on mortality and since, in addition, it provides a direct numerical link between mortality and the rate of population change, this observation merits special attention.[5]

Until as late as 1930 almost uniformly, and up to the Second World War as a rule, national crude death rates in both eastern and southern Europe were clearly above those of the northern and western regions (appendix table A.III.2). However, as suggested in table III.2 for regions, such distinctions had largely disappeared by 1950; by 1970 they had become the reverse of regional differences in length of life.[6]

These contradictions stem from the growing influence of changing age composition on the death rates in all parts of the continent. So long as regional mortality differed by substantial margins, as was still the case before 1950, its variations over space could dominate differences in age structure. The same was true of shifts over time through the 1950s. By the 1960s, however, decelerating mortality had brought to an end these net balancing effects, both of which had endured in most of Europe for the better part of a century at least.

Calculations for about two dozen countries representing all regions show that shifts in age-structure during both the 1950s and 1960s were operating to raise crude death rates throughout Europe by an average of nearly 1 per 1,000 in each decade. During the 1950s, when the average effect of mortality declines proper was to lower the death rate by about twice this amount, the continent's average rate fell by approximately 1 per 1,000, as is shown in table III.2. Nationally, the mortality trends of the 1950s acted to lower the death rate for every popu-

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found in northern and western countries during 1900-1950 have been typically far greater than those countries' substantial advances of 1850-1900. A more recent example, involving Denmark, Norway and Sweden, is the fact that each of these leaders of Europe's mortality downtrends showed greater upward movements in expectation of life at birth between the 1930s and 1950s than between the 1900s and the 1920s.

Documentation of the reasons for anticipating that the recent decelerations cannot be followed by comparable accelerations, at least those caused by younger-age mortality declines, is given in the final section of this chapter and in table III.12.

[5] The rate of population change during any period can be expressed as the difference between crude birth and death rates plus the difference between immigration and emigration rates (ignoring here the use of mid-period populations for the two crude rates and initial-period populations for the other three).

[6] Correspondingly, the relations between national crude death rates and expectation of life at birth have become increasingly attenuated, almost to vanishing point. Starting with a coefficient of correlation of nearly −0.9 about 1930, the levels have fallen successively to −0.6 in 1950 and −0.2 in 1960; by 1970, the coefficient was close to zero and, if anything, somewhat positive.

TABLE III.2

Crude death rates, by region, about 1950, 1960 and 1970

(*Weighted averages*)

Region	*1950*	*1960*	*1970*
Eastern Europe	11.6	9.3	10.2
Northern Europe	11.2	11.0	11.2
Western Europe	11.2	11.1	11.2
Southern Europe	10.6	9.6	9.3
Total[a]	11.1	10.3	10.4
USSR	9.7	7.1	8.2

Sources: See table III.1. [a] Excluding the USSR.

lation, dominating age effects in two-thirds of them and being dominated in only one-third. During the 1960s, in marked contrast, average effects from mortality declines tended to be less than half those from age-structure effects, so that the net effect was to raise the death rate somewhat. Moreover, the array of effects is as revealing as their average. Mortality as well as age changes were operating to raise the crude death rate in about one-fifth of the cases, and among the populations in which mortality as such should have lowered the rate only about one-third registered an actual decline, while the remainder showed a rising rate from dominant age effects.

The corresponding regional patterns are remarkably consistent. During the 1950s, all four regions evinced strong reducing effects on the crude rate from mortality changes, especially in eastern and southern Europe, but all had at the same time about equal rate-increasing effects arising from age composition. During the 1960s, age everywhere continued to produce about the same gross effects as a decade earlier; but mortality changes, though again tending to reduce the crude rate, had become much smaller, and were thus dominated by the age factor in each region, as well as in the USSR.

It seems probable therefore that the main use of the crude death rate for documenting European mortality will be as a preliminary or early signal indicator, and even then only in cases of larger movements over short periods (when age structure is essentially constant). At the moment, it is difficult to interpret reliably the post-1970 trends in the crude death rates, which appear to be upward in a number of countries over all parts of Europe, particularly in the countries which until recently had a relatively young age structure (see appendix table A.III.3).

A different order of uncertainty surrounds the effect of future shifts in the death rate on population growth rates. Here the uncertainties are on the whole less, at least relative to what most needs to be known. For one thing, the probability seems high that future effects of age shifts will be to raise the death rate and lower the growth rate in most of Europe, rather than the reverse; for another, the current lull in mortality trends proper argues in the same direction.

The same conclusion is borne out partly by a theoretical consideration: actual death rates everywhere in Europe are below a stationary population level. With fertility in large parts of the continent not far from zero growth level, the death rate suggested by the stationary population model has special current relevance as an empirical guideline.[7] Specifically, the fact that the present stationary population death rate in all regions, about 14 per 1,000, is roughly 40 per cent above actual death rates, implies that the latter are likely to rise over one-third if mortality and fertility remain close to current levels. Indeed, should fertility continue on its present predominantly downward path, the above-mentioned 40 per cent discrepancy between actual and potential death rates could be exceeded.

Extremely large fluctuations in fertility or waves of migration, acting alone or in combination, could conceivably upset today's prospective age-structure effect on the death rate in individual instances, as could a rise in mortality of very substantial or catastrophic proportions. However, if reasonably normal possibilities are assumed, it appears probable that the era of major effects of the death rate on growth came to an end in all parts of Europe between the Second World War and 1960.

3. *Life expectancies at later ages*

Just as expectation of life at birth reflects mortality conditions at all ages subsequent to birth, so does the corresponding measure at any other age summarize mortality levels for all subsequent ages.[8] The accompanying data for ages 30 and 65 years, therefore, summarize average regional conditions at the ages respectively beyond the young-adult years, and again beyond the early advanced adult years (see table III.3 and appendix

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[7] A life-table stationary population is one in which there is no migration, total annual births equal total deaths and the probability of dying (or surviving) between the two ages is constant. These assumptions imply a population of fixed (no growth) size and unchanging age structure. Under these circumstances, the crude death rate would equal the reciprocal of expectation of life at birth (expressed in the usual per 1,000 fashion). The latter being equal to about 70 years in all of Europe's regions implies the stationary population death rate of 14 per 1,000 cited in this paragraph.

[8] Although there may well be behaviourally significant causal relations between mortality levels before and after any age of interest, life expectancy as technically measured for any age x depends only on mortality rates beyond x, and indeed can be calculated without knowledge of the rates for younger ages.

TABLE III.3

Male and female expectation of life at ages 30 and 65, by region, about 1950, 1960 and 1970

(Weighted averages)

Region	*1950*		*1960*		*1970*	
	Males	*Females*	*Males*	*Females*	*Males*	*Females*
			Age 30			
Eastern Europe	40.2	43.5	41.4	45.4	41.1	46.0
Northern Europe	40.9	44.4	41.6	45.4	41.6	47.3
Western Europe	40.6	44.0	41.1	46.0	41.2	47.4
Southern Europe	40.5	43.4	42.1	45.8	42.1	47.1
Total[a]	40.6	43.9	41.6	45.7	41.5	47.0
USSR	..	..	40.7	47.1	39.2	48.1
			Age 65			
Eastern Europe	12.4	13.9	12.6	14.5	12.3	15.0
Northern Europe	12.4	14.3	12.5	15.2	12.5	16.4
Western Europe	12.5	14.1	12.5	15.0	12.5	16.4
Southern Europe	12.3	13.8	13.0	14.9	13.1	15.9
Total[a]	12.4	14.0	12.7	15.0	12.6	16.0
USSR	..	..	14.0	16.8	13.4	17.8

Sources: See table III.1. [a] Excluding the USSR.

table A.III.1 for data by country). Such measures have a separate interest from those of expectation of life at birth, not only because of their very different order of magnitude, but also because they often portray distinct distributional patterns over space and time.

The patterns shown in these two tables are noteworthy on several counts. First, it is clear that male longevity beyond the early years of life failed to make any progress during the 1960s and, indeed, may well have retrogressed. For age 30, all male regional averages showed falling, or essentially non-rising levels between the beginning and the end of the decade, while well over half the national populations, with cases found in each of the four regions, registered declines. Probably only the increases documented for France and Switzerland were both substantial and reliable enough to warrant the firm conclusion that they were upward movements, those for Greece and Portugal being subject to some unsettled questions of reliability. In the German Democratic Republic, Norway, the Federal Republic of Germany and the Netherlands, the 1970 values were below even those of 1950.

Again, at age 65, the limited progress for European males since 1960 is evident in both the regional and national figures. For 1950-1970 as a whole, as many countries in the combined regions of eastern, northern and western Europe showed decreases as increases.

Secondly, female longevity at the same ages has risen consistently, both during the 1950s and again since 1960. All regional averages rose during both decades, as did nearly all individual national measures.

Thirdly, neither the slowdowns in nor the reversals of the trend towards increased male later-age longevity, nor the continuing increases for females seem to have had a significant effect on the degree of inter-regional or intra-regional variations. Some measures of dispersion would suggest that the variations may have increased somewhat over the past decade for three of the four sex-age longevity distributions involved, especially at age 65 in northern and western Europe, but the changes are not substantial.

Fourthly, the near disappearance of gains in male longevity, if not the onset of losses, is a clear reversal of very long-run tendencies. On the other hand, no simple generalization describes the continued gains for females, for which a description of acceleration-deceleration patterns would be more appropriate. At age 30 national increases in life expectancy during the 1960s were typically lower than those of the 1950s, but at age 65 the reverse was more nearly the case.

Some light is thrown on the sources of these disparities in the closing section of this chapter, which analyzes death by causes in various sex-age groups.

4. *Age-specific patterns*

The age-specific elements underlying the aggregate measures so far discussed present varied regional patterns, as can be seen from table III.4. Throughout the infant and childhood ages, northern Europe has recently had the lowest average mortality by substantial margins, followed by western Europe, with eastern Europe occupying a distant third position, as a rule not far removed from the highest mortality levels of southern Europe. Between the childhood and middle adult years, using age intervals 5 to 25 and 35 to 45 as convenient intervals, northern Europe still consistently occupies the lowest

TABLE III.4

Male and female age-specific probabilities of dying, their sex ratios and recent changes, by region, about 1960 and 1970

(Weighted averages of $_nq_x$ per 10,000 population in sex-age group, ratios of female to male values and changes in percentage)

Age, sex and sex ratio	*1960*	*1970*	*Percentage change*	*1960*	*1970*	*Percentage change*
Under 1		*Eastern Europe*			*Northern Europe*	
Male	572	379	*−34*	249	195	*−22*
Female	465	298	*−36*	191	149	*−22*
Ratio	*81*	*79*	..	*77*	*76*	..
1-4						
Male	77	58	*−25*	42	33	*−22*
Female	70	50	*−29*	33	25	*−24*
Ratio	*91*	*86*	..	*79*	*76*	..
5-24						
Male	208	184	*−12*	148	139	*−6*
Female	110	90	*−19*	72	69	*−4*
Ratio	*53*	*49*	..	*49*	*50*	..
25-44						
Male	471	513	*+9*	369	354	*−4*
Female	313	262	*−16*	250	223	*−11*
Ratio	*66*	*51*	..	*68*	*63*	..
45-64						
Male	2366	2409	*+2*	2412	2395	*−1*
Female	1487	1396	*−6*	1393	1337	*−4*
Ratio	*63*	*58*	..	*58*	*56*	..
65-74						
Male	3888	4069	*+5*	3993	4044	*+1*
Female	2909	2797	*−4*	2630	2415	*−8*
Ratio	*75*	*69*	..	*66*	*60*	..
Under 1		*Western Europe*			*Southern Europe*	
Male	334	217	*−35*	588	409	*−30*
Female	259	166	*−36*	503	340	*−32*
Ratio	*78*	*76*	..	*86*	*83*	..
1-4						
Male	55	40	*−28*	130	59	*−55*
Female	44	31	*−30*	129	55	*−57*
Ratio	*80*	*78*	..	*99*	*93*	..
5-24						
Male	182	194	*+6*	185	166	*−10*
Female	86	88	*+2*	119	86	*−28*
Ratio	*47*	*45*	..	*64*	*52*	..
25-44						
Male	450	464	*+3*	444	423	*−5*
Female	275	245	*−11*	312	237	*−24*
Ratio	*61*	*53*	..	*70*	*56*	..
45-64						
Male	2481	2396	*−3*	2250	2189	*−3*
Female	1373	1258	*−8*	1381	1233	*−11*
Ratio	*55*	*52*	..	*61*	*56*	..
65-74						
Male	3877	3982	*+3*	3641	3698	*+2*
Female	2603	2376	*−9*	2678	2454	*−8*
Ratio	*67*	*60*	..	*74*	*66*	..

Source: WHO, data bank.

mortality position, but the relative rankings of the other three regions become dependent upon age, sex or period. Southern Europe, which had the highest mortality rate for females aged 5 to 25 in 1960, had seemingly reached the second lowest regional position only a decade later. Beyond age 45, northern Europe no longer appears as the continent's lowest-mortality region, such ranking generally alternating in erratic manner between western or southern Europe. The most consistent has been eastern Europe, which almost always had the third or fourth highest mortality position among the four regions.

It is probable that these somewhat surprising comparisons at the upper ages reflect actual facts only in part. In good part, almost surely, they are the outcome of differential accuracy of reporting among regions.[9]

Also apparent from the table has been a recent slowdown of percentage changes in mortality beyond the childbearing ages.[10] Beginning with the interval 5-24, in contrast to that of 0-5 years, most changes indicated for 1960-1970 were small and not a few were in an upward direction, depending on the age, sex and region involved. In eastern Europe average male mortality fell by substantial percentages below age 25 but rose at later ages; for females there were declines at all ages, though by steadily diminishing amounts over the life cycle. Northern Europe experienced declines for males at most ages, again at reducing rates, but a slight rise beyond the age of 65 and a fluctuating pattern of declines for females. In western Europe males over 25 tended to experience rising average mortality, though with exceptions at some ages; this region showed increases among females in the 5 to 25 years range. Southern Europe experienced declining mortality for both sexes at nearly all ages, the degree of change generally falling with age. Atypically, this region shows a distinct maximum percentage change at ages 1 to 5 years.

Short-lived increases in some age-specific mortality rates of individual European populations have not been uncommon in the past, but the appearance of rising region-wide averages over decade-long periods could prove ominous. If extended or intensified over time, such phenomena would mark the end of one of the most uniformly consistent spheres of progress in Europe's modern social history.

A further highly variable outcome of the 1960-1970 sex-age specific trends has been the dissimilar movements of high-low differences in the four regions. Such differences for both sexes fell by about one-third in the infant year of life and by about two-thirds in the 1 to 5 years age interval. Beyond this point, however, distinctive variations by age have been intermingled with dissimilar patterns by sex. Practically no change in the high-low difference for males and a drop of over 50 per cent for females is found in the 5 to 25 age interval. A rise of over 50 per cent for males was accompanied by a fall of over one-third for females in the age-group 25 to 45. No major changes for males and a nearly 50 per cent rise for females held for the 25 to 45 and 45 to 65 age intervals; and there was again no change for males and a one-third rise for females in the 65 to 75 age-group.

At a minimum, these variations are interesting aspects of the recent tendencies for aggregate measures to converge. But, in addition, they may presage a new order of inter-regional variations with respect to levels, and even ranking of age-specific mortality rates, particularly if the pronounced downtrends of earlier decades are superseded in most of the continent by low-order or erratically fluctuating movements.

A complementary body of summary information on recent European differentials in age-specific mortality is given by the coefficients of variation in table III.5 for

TABLE III.5

Coefficients of variation in age-specific death rates, by sex, in Europe, 1960 and 1970

(Ratio for Europe of standard deviation to average in percentage)

Age interval	*Males*		*Females*	
	1960	*1970*	*1960*	*1970*
Under 1	48	46	54	54
1-4	74	63	88	66
5-14	30	20	36	24
15-24	24	22	30	26
25-34	22	23	25	23
35-44	20	21	20	17
45-54	19	17	14	16
55-64	18	17	17	16
65-74	17	15	15	14

Source: See table III.4.

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[9] An indicator of this presumption is the high proportions of deaths attributed to "senility, ill-defined and unknown causes" in a number of countries of southern Europe. See WHO, *World Health Statistics Annual 1970* (Geneva), table 5.5.3, pp. 675-676 especially. The same point is suggested by the high percentages of deaths from "all other causes" shown in table III.10 of the present survey for a number of countries in this region.

[10] For the pattern by age among individual countries, see appendix table A.III.4 which presents for nine countries mortality rates by smaller age-intervals as of 1950, 1960 and 1970. Among the clear tendencies to be noted there for the 1950s are that male rates declined sharply at all but the upper ages (at which increases are sometimes noted), while practically all female rates showed major-scale downtrends. In contrast, during the 1960s, most declines encountered for either sex were considerably smaller than in the previous decade, while increases in mortality are by no means infrequent at ages beyond the early childhood years. See also table III.8 on infant mortality.

smaller age intervals than shown previously. Since distributions of national data are involved, all national rates in a given sex-age category are given equal weight (unlike their treatment in deriving the above weighted regional averages).

Some leading characteristics of the recent sex-age-specific dispersions so calculated are the pronounced peaking of the coefficients in the 1 to 5 years age interval, the clear tendency toward declining coefficients with age beyond five years, and the cross-over from lower male coefficients at ages under 35 to somewhat higher values at age 45 and above. For each sex there was a modal tendency to reduced variability between 1960 and 1970, in line with earlier indications.

5. *Linkages between changing age-specific mortality and length of life*

An important question for interpreting mortality conditions is the extent to which changes in total length of life can be attributed to varying death rates in different parts of the life cycle. Currently, the extent to which recent gains in expectation of life at birth can be traced to changing age-specific mortality levels in the childhood, adult or advanced ages has added significance, given the mounting evidence that dramatic transformations are taking place over all parts of the continent in the nature of such linkages.

Table III.6 presents linkage estimates, by sex, for three broad age-groups in nine countries, for an earlier period between the pre-war and post-war years, and for one or two recent periods since the end of the Second World War. Specified dates were determined by the availability of published life tables; two countries, as a rule larger ones, are included from each region, plus the USSR. The indicated percentages represent the fractions of any cited change in life expectancy at birth which can be attributed for the given period to its mortality shifts within each age interval separately, i.e. if mortality had changed in that interval alone and no changes had taken place in other ages.[11] Because small changes in total longevity tend to lead to erratic fractions when used as a percentage base, entries based on a change of below a year or even 1.5 years should probably be treated with special caution. A negative entry indicates a reduction in total longevity as a result of rising age-specific death rates in the given interval of age.

Before turning to the percentages themselves, it is worth noting how clearly the total change in e_0^0 given in the initial column of table III.6 confirm an over-all longer-run pattern of sharply decelerating gains. Only France for females shows a change between the pre-war and post-war years which is roughly comparable with that for either one of the two indicated post-war periods, a result partly attributable, however, to the short earlier and the long more recent post-war period involved. In all other instances, the pre-war to post-war changes are far higher for each sex than the recent changes. Only France again shows a greater change for the 1960s than for the 1950s, for males as well as for females.

As to the percentages themselves, these reveal a number of interesting uniformities in trend for the female populations of all regions. The contribution to rising female length of life as a result of falling mortality has everywhere declined sharply in the case of the 15 to 64 age interval, and has everywhere increased markedly within the 65-plus interval. The latter, which during the pre-war and early post-war years had invariably provided the lowest of the three sources of contributions, had by the 1960s clearly outstripped the former. Indeed, it had also become comparable with, or come to exceed, the 0 to 15 age interval contribution in about half the cases. The largest contributions recently to the expectations at ages 65 and over have been in northern Europe and the second highest in western Europe. Conversely, the largest contributions recently at ages 0-14 years, about 50 per cent or more for both sexes, are found in the higher-mortality regions of eastern and southern Europe and the USSR.

These variations in patterns can be related to a single underlying factor, i.e. the scope for further declines as of a given area or date. Such leeway was considerably larger in the pre-war years than it has been in recent periods, at all ages and in all areas. It has also been higher at the childhood ages in the higher-mortality areas than in the lower mortality areas during recent decades, and in all areas it has become increasingly large at the advanced ages, relative to both childhood and earlier adult ages of life.

Should female death rates continue to move downwards at all ages in Europe, their effects in increasing length of life could be in sharp contrast with past experience. Throughout the modern era, as suggested here by data for as late as about 1950, the chief sources of such increases were the childhood and younger adult ages. Today, however, the weight of relative contributions has tilted sharply to the older ages. Thus, whereas in the past mortality declines have tended to reduce average age of population and to affect age distribution in only a limited degree, recent declines and the declines now in prospect are much more likely to raise average age, and therefore to have much more decided impact on the proportions aged than at any time in well over a century.

For males, the patterns are obscured both by the small number of reliably allocable contributions that can be made for recent decades and by the recent tendency for some age-specific mortality rates to rise rather than to continue falling. However, to the extent that the data are indicative, they generally resemble the patterns for females. Thus the relative contributions between pre-war and post-war periods show a generally marked pattern of decline with rising age (France being the main

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[11] Specifically, it can be shown that the change in longevity caused by a single change in age-specific mortality, between arbitrary ages a and b ($a \leq b$), is given by the following equation:

$$\Delta e_o = e\,(o, a) + e'\,(a, b)\,p\,(o, a) + \\ + e_b\,p\,(o, a)\,p'\,(a, b) - e_o.$$

Here the unprimed values refer to the initial period level and primed values to the end of the period. The left-hand side Δe_o denotes change in expectation of life at birth; e_o and e_b refer to life expectancy at ages o and b, respectively; $e\,(o, a)$ and $e'\,(a, b)$ denote average length of life between the ages in parentheses; $p\,(o, a)$ and $p'\,(a, b)$ represent the probability of survival between the ages in parentheses.

TABLE III.6

Changes in male and female expectation of life at birth and contributions to change from three broad age-groups, in nine countries, for three periods

(*Changes in years; contributions in percentage*)[a]

Region and country, dates	*Males*				*Females*			
	Change	*0-14*	*15-64*	*65 +*	*Change*	*0-14*	*15-64*	*65 +*
Eastern Europe								
Hungary								
1930-1931 to 1948-1949	10.48	66.2	25.1	8.6	11.90	58.3	31.8	9.9
1948-1949 to 1959-1960	6.43	66.1	38.6	−4.7	6.33	59.3	43.8	−3.1
1959-1960 to 1969-1970	1.37	102.2	−4.4	2.2	2.80	46.7	22.8	30.5
Poland								
1931-1932 to 1952-1953	10.40	67.3	28.9	3.8	12.80	56.2	37.2	6.7
1952-1953 to 1960-1961	6.20	61.9	30.0	8.1	6.30	54.3	33.7	12.0
1960-1961 to 1969-1970	2.09	85.1	4.8	10.1	3.48	51.8	16.3	32.0
Northern Europe								
England and Wales								
1930-1932 to 1950-1952	7.75	60.6	34.2	5.2	8.34	50.8	39.1	10.1
1950-1952 to 1958-1960	1.61	50.3	45.3	4.4	2.68	26.9	49.6	23.5
1958-1960 to 1969-1970	0.68	72.9	40.7	−13.6	1.42	26.6	9.4	64.0
Sweden								
1931-1940 to 1946-1950	5.28	49.4	44.9	5.7	5.45	40.6	51.3	8.0
1946-1950 to 1956-1960	2.19	38.3	50.0	11.7	3.14	22.8	53.3	23.8
1956-1960 to 1966-1970	0.62	82.5	4.8	12.7	1.87	22.5	27.5	50.0
Western Europe								
France								
1933-1938 to 1946-1949	5.93	26.2	64.8	9.0	5.79	26.9	58.8	14.4
1946-1949 to 1952-1956	3.17	77.8	22.8	−0.6	3.72	59.1	34.6	6.3
1952-1956 to 1969-1970	3.58	54.0	27.7	18.2	5.52	32.0	28.5	39.4
Germany, Federal Republic of								
1932-1934 to 1949-1951	4.70	55.4	32.4	12.2	5.67	42.3	44.8	12.9
1949-1951 to 1959-1960	2.13	97.2	17.5	−14.7	3.46	52.3	34.1	13.4
1959-1960 to 1969-1970	0.43	207.0	−20.9	−86.0	1.86	44.8	11.0	44.2
Southern Europe								
Italy								
1930-1932 to 1950-1953	9.99	65.8	30.3	3.9	11.25	59.2	35.3	5.5
1950-1953 to 1960-1962	3.49	65.4	20.5	14.1	5.02	47.8	28.3	23.9
1960-1962 to 1969-1970	1.05	110.4	13.2	−23.6	2.48	47.5	14.0	38.4
Spain								
1930 to 1950	10.38	63.1	30.2	6.7	11.90	55.4	33.6	11.0
1950 to 1960	8.56	55.8	38.6	5.6	8.40	60.5	32.5	7.0
1960 to 1969	1.82	80.1	5.0	14.9	2.66	49.6	23.5	26.9
USSR								
USSR								
1926-1927 to 1958-1959	22.47	78.1	18.5	3.4	24.91	71.0	23.0	5.9
1958-1959 to 1969-1970	0.39	447.5	−257.5	−90.0	3.12	60.5	14.4	25.2

Sources: See table III.1.

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[a] Percentages may not add up to 100.0 because of rounding.

exception), with the percentages at ages 0-14 being far above those for the 65 and over group. All three of the areas with changes exceeding 1.5 years in the 1960s (Poland, France and Spain) show a falling contribution at ages 15-64 years, and a rising contribution at ages 65 and over, to the point where the latter exceeds the former in two instances. The implications for the direction and size of effects on age distribution thus appear to be similar to those noted for females, unless the historical trend of declining mortality becomes superseded by reversals or trendless fluctuations.

C. Infant mortality

Because infant death rates are often especially responsive to changing conditions of infectious disease, nutrition or medical care, they are widely cited as more sensitive indicators of the quality of the environment affecting health than are the rates at later ages. Internationally, for example, the high-low spread of infant mortality tends to approximate a 20-to-1 ratio, or even higher, in contrast to much lower orders of dispersion among rates at later ages. Closely related to infant mortality rates as indicators of medical or socio-economic conditions is the way in which such rates divide into neonatal (first month of life) and post-neonatal (next eleven months) components. This distinction corresponds to the important differentiation often needed in health analyses and programmes between prenatal causes of infant deaths, i.e. those related largely to the quality of the mother's environment during pregnancy, and the post-natal causes stemming from the child's conditions of life after birth.

An additional reason for singling out the first year of life is that changes in the chances of infant survival have greater effect on total longevity than do equally large variations at any later stage.[12] Recognition of this point adds emphasis to the findings of section B of this chapter that future trends, or lack of trends, in expectation of life at birth may well require interpretations different from those that have held true for the past.

Table III.7 presents regional average rates of infant mortality and their neohatal and post-neonatal components at the end of each decade since the Second World War. Since the spread of national distributions is so much greater for these than for the more aggregative measures described earlier, corresponding data by country are presented in table III.8.

As of 1970, infant mortality in Europe ranged from a minimum of not much above 10 per 1,000 to high levels of from 40 to 45 per 1,000 births (excluding Albania, for which the most recent available statistics showing levels approximating 80 to 85 per 1,000 relate to a decade ago). All of the Scandinavian countries, as well as the Netherlands and Switzerland were bunched within a narrow interval of 10 to 15 per 1,000 births, which is lower than national rates found anywhere else in the world, except possibly Japan. Levels of 40 and over applied to Portugal and Yugoslavia from southern Europe, and Romania from eastern Europe. Only the German Democratic Republic among the countries of these last two regions had an infant mortality rate clearly similar to the values applying in northern and western Europe.

Apparently without exception, the latest rates for 1972 or 1973 (not presented in table III.8) show clear-cut or substantial declines below the 1970 levels.[13] Although greatest changes in infant mortality are currently in the areas with the highest contemporary levels, such as Romania, Portugal and Yugoslavia, pronounced absolute or percentage declines are found throughout the continent in such countries as Poland, Sweden (with the lowest rate in the world), France, the Federal Republic of Germany and Italy. The frequency of sharp current downtrends is in marked contrast with the much slower, and sometimes even upward, movements found at older ages.

The downward trends since 1970 extend the rapid transformations which took place in all parts of Europe between 1950 and 1970, when infant mortality fell in round terms by 50 per cent in northern Europe, 60 per cent among populations in western and southern Europe,

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[12] This can be deduced from the equation cited in foot-note 11 of this chapter.

[13] Spain shows an especially sharp drop to almost 15 per 1,000 in 1973; however, the true meaning of the decline is obscured by an apparent 1972 change in reporting methods, under which deaths occurring before birth registration become excluded from infant deaths. Compare *Demographic Yearbook 1972* (United Nations publication, Sales No. E/F.73.XIII.1), table 21, p. 506, with data for earlier years.

TABLE III.7

Infant mortality, neonatal and post-neonatal rates, by region, about 1950, 1960 and 1970

(*Weighted averages of deaths in total infant year, first month and rest of year per 1,000 live births*)

Region	*Infant*			*Neonatal*			*Post-neonatal*		
	1950	*1960*	*1970*	*1950*	*1960*	*1970*	*1950*	*1960*	*1970*
Eastern Europe	98	53	33	48	23	19	50	30	14
Northern Europe	33	22	17	19	16	12	14	6	5
Western Europe	52	29	20	28	19	14	24	10	6
Southern Europe	81	56	36	32	25	19	49	31	17
Total[a]	70	42	28	33	21	16	37	21	12
USSR	84	36	24	..	..	...	..	..	..

Source: See table III.1.

[a] Excluding the USSR.

TABLE III.8

Infant mortality, neonatal and post-neonatal rates, in 23 countries, about 1950, 1960 and 1970

(Deaths in total infant year, first month and rest of year per 1,000 live births)

Region and country	*Infant*			*Neonatal*			*Post-neonatal*		
	1950	*1960*	*1970*	*1950*	*1960*	*1970*	*1950*	*1960*	*1970*
Eastern Europe									
Bulgaria	96.8	46.3	27.6	41.7	20.0	13.3	55.1	26.3	14.3
Czechoslovakia	75.3	24.0	22.5	32.6	13.8	15.6	42.7	10.2	6.9
German Democratic Republic	70.3	37.8	19.7	32.0	19.9	13.7	38.3	17.9	6.0
Hungary	79.8	48.0	35.5	35.9	27.2	28.1	43.9	20.8	7.4
Poland	110.0	60.9	32.4	57.1	27.6	19.1	52.9	33.3	13.3
Romania	118.1	74.8	48.9	61.3	20.8	20.9	56.8	54.0	28.0
Northern Europe									
Denmark	31.4	21.9	15.1	18.6	16.4	11.9	12.8	5.5	3.2
Finland	42.4	21.8	12.9	21.4	14.8	10.1	21.0	7.0	2.8
Ireland	48.4	30.6	20.4	24.3	21.3	14.2	24.1	9.3	6.2
Norway	27.2	18.5	13.8	14.4	11.5	10.5	12.8	7.0	3.3
Sweden	22.0	16.3	11.7	16.0	13.6	9.2	6.0	2.7	2.5
United Kingdom	32.2	22.6	18.3	20.3	17.0	12.5	11.9	5.6	5.8
Western Europe									
Austria	68.2	36.7	25.8	35.9	23.9	18.9	32.3	12.8	6.9
Belgium	53.5	29.9	21.2	28.3	19.5	14.5	25.2	10.4	6.7
France	54.3	27.5	19.6	23.6	15.9	10.5	30.7	11.6	9.1
Germany, Federal Republic of	55.8	33.3	23.4	34.6	23.5	17.4	21.2	9.8	6.0
Netherlands	25.7	16.2	12.3	16.7	11.9	9.1	9.0	4.3	3.2
Switzerland	31.9	21.4	15.5	21.7	16.2	11.5	10.2	5.2	4.0
Southern Europe									
Greece	43.6	40.2	29.5	20.3	19.5	19.5	23.3	20.7	10.0
Italy	68.1	43.3	29.4	31.7	23.3	19.8	36.4	20.0	9.6
Portugal	99.2	85.0	53.8	33.0	30.6	23.6	66.2	54.4	30.2
Spain	70.9	46.1	30.0	23.4	21.0	13.4	47.5	25.1	16.6
Yugoslavia	121.1	87.2	57.0	46.9	34.0	25.1	74.2	53.2	31.9

Sources: See table III.1.

two-thirds in eastern Europe and nearly three-fourths in the USSR. With levels now so low, continuing declines of these dimensions cannot occur on a regional basis. Among individual countries as well, a near-halving or more of infant mortality rates occurred over 1950-1970 in all but possibly two cases, Greece and Portugal.[14]

Also brought out by both regional and national measures is a widespread tendency to decelerated change during the 1960s compared with the very high momentum of change during the 1950s, and the continuing convergence of intra-continental patterns of infant mortality. The 1950 difference of 65 per 1,000 between the eastern and northern regional averages, for example, is almost four times their difference in 1970, and indeed is not far from double the highest infant mortality level of any region in 1970, namely 36 in southern Europe.

Although deceleration of trends everywhere has become almost foreordained because all levels are already so low, it seems probable that the areas with the higher rates will have faster declines than those with lower rates, and that convergence will thus continue. At the same time, the continuation of the current regional rankings also seems assured for at least the time being, with northern and western Europe continuing to be close to each other and each remaining in obvious contrast with the higher levels of eastern and southern Europe.

Decomposing the infant or full-year rates discussed so far into their neonatal and post-neonatal sub-aggregates helps to bring out some of the finer structure of the recent levels, trends and prospects. In 1950, only France among the populations of northern and western Europe had higher post-neonatal than neonatal risks of dying, though the two rates were not far apart in Finland and Ireland. In contrast, every nation in southern Europe, and all but apparently Poland and Romania in eastern Europe, showed higher post-neonatal rates. By 1970, however, after both sets of values had plummeted everywhere since 1950, the balance had become even more clearly tilted towards higher neonatal rates. This was so throughout northern and western Europe by 1970, with again the exception of France, where the rates were approximately equal. In southern and eastern Europe, a much larger number of areas than before showed larger neonatal rates—many for the first time in their recorded history—while in four of the remaining five countries the margins of post-neonatal over neonatal risks had fallen drastically.[15]

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[14] In Portugal, where the 1970-1972 decline was very steep, the 1950-1972 change approximates 60 per cent. In the case of Greece, where substantial inaccuracies in the reported trend seem probable, the apparent failure to achieve a halving of the 1950 rate may be more a function of statistical error in the earlier measure than of the actual facts.

With respect to comparative trends, much of the patterning encountered during recent decades can be linked to starting levels. Since the declines of post-neonatal rates in eastern and southern Europe during 1950-1970 greatly exceed the 1950 levels of such rates in northern and western Europe, they have necessarily been far beyond the maximum further changes possible in either of the latter regions. Also, within the countries composing the regions of northern and western Europe, the largest shifts have tended to occur among those with initially the highest rates (Austria, Belgium, Finland, France, the Federal Republic of Germany and Ireland). Conversely, the smallest shifts have occurred in the Netherlands, Sweden and Switzerland.

Regional and national neonatal trends are more varied, perhaps in part because of unreliability of data for a number of areas. In line with anticipations, the lowest 20-year trends as a rule have been in the countries of northern Europe and the second lowest in western Europe, with the largest by far in eastern Europe. However, the populations of southern Europe other than Yugoslavia show smaller gains than expected, given the region's intermediate position between eastern and western Europe.

Europe's post-neonatal experience follows a more clearly defined pattern over time compared with the neonatal trends. All four regions show a marked tendency to decelerating changes in post-neonatal rates between the 1950s and 1960s, reflecting the increasing strength of boundary effects as rates have reached greatly reduced levels. In contrast, the neonatal series show no consistently ordered structure of changes over time. While eastern Europe has experienced a very rapid rate of deceleration in recent decades, the decline in its regional average during the 1950s being about six times that of the 1960s, southern Europe's change has shown essentially no variation between the two decennial periods. Analogously in the lower-mortality regions, although the trend in western Europe's average has clearly slowed down, this is not the case in northern Europe, despite its lower initial rates in both 1950 and 1960.[16]

The markedly lower levels of neonatal and post-neonatal mortality to be found throughout Europe today compared with 1950 or earlier periods, as well as the substantial recent differences to be found in their trend performance both within and between regions, make it probable that national policy targets affecting infant mortality will undergo major modifications in the decades ahead. Such shifts are likely to be highly different by region and country. Further support for this conclusion will be presented below in discussing endogenous and exogenous causes of infant deaths, with which the neonatal and post-neonatal distinction is closely associated.

D. Sex differentials

Life expectancy for females in all parts of Europe is universally longer than for males. This has been so for many decades. Prior to about 1920, lower male mortality was by no means an uncommon phenomenon, particularly at the young adult ages, though clearly not a typical one. For the last half century at least, however, such instances have disappeared from the available national records, if indeed they have occurred in fact. A number of the previous tables have documented selectively some dimensions of one of the most striking sociodemographic uniformities of the present era, not only throughout Europe but in industrial societies everywhere.

Almost as universal as the direction of differentials in life expectations, and perhaps even more striking, has been the persistency of their increases. Available evidence for all ages, but documented here for only ages 0, 30 and 65, suggests that national margins of female over male life expectancy have increased almost uninterruptedly since the 1920s. Today they are, with only rare or minor exceptions anywhere in Europe, at the highest points ever recorded in peacetime.[17]

In 1950, 1960 and 1970 the difference between female and male expectation of life in total Europe (excluding the USSR) amounted to four, five and six years, respectively (see table III.1). Regionally, the differentials over the past two decades have been consistently rising everywhere, being highest in the USSR and western Europe, and lowest in eastern and southern Europe during the 1960s. The pronounced rise in differentials during both the 1950s and 1960s means that this trend has persisted over a period of sharply decelerating changes in total longevity for both sexes.

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[15] The exception is Romania, where an apparent shift from a higher neonatal than post-neonatal rate in 1950 to a lower one in 1970 went against an otherwise universal pattern. This may have been related to a rise in infant mortality in 1968 following a 1966 change in Romania's abortion law.

[16] Because both neonatal and post-neonatal rates have become so small as a rule, their variations in percentage terms have tended to become erratic. Thus southern Europe during 1950-1960 experienced a higher percentage decline in its neonatal rate than did northern Europe but practically the same relative shift in post-neonatal mortality, despite its considerably greater absolute amounts of change in both respects. Again, where northern Europe showed a lower percentage change in neonatal mortality during the 1950s than in the 1960s, western Europe experienced a reverse configuration, even though the amounts of change were less in the former region during both periods. Southern Europe, when compared with western Europe in the 1950s, had a considerably lower percentage drop but a higher absolute decline in post-neonatal mortality; during the 1960s the former had only a marginally higher percentage decline despite an over three-to-one margin in absolute terms. Such examples, which could be multiplied, bring out the greatly lessened usefulness of percentages in all trend analyses involving low mortality rates.

[17] The qualification has potential importance, since available life tables rarely reflect the effects of major wars. In the Federal Republic of Germany, the immediate post-war differentials between female and male length of life reached a temporary maximum which was rapidly exceeded as a result of subsequent trends. On the other hand, the soaring early post-war differentials in a non-European population, Japan, have never been reached since, though long-run trends here as well have been upward and appreciable.

In ratio terms, and by regions, as can be seen from table III.1, higher female length of life is approaching 8 to 10 per cent differentials on average over male levels, with no region showing less than an 8 per cent margin. The ratios of age-specific mortality probabilities, presented in table III.4, have recently tended to show some 10 to 20 per cent margins favouring females at the young ages and then to accelerate toward 25 to 50 per cent margins at higher ages. Of the 24 ratios of female to male age-specific rates shown in the table all but one moved downward between 1960 and 1970, i.e. in the direction of lower relative female mortality.

The specific patterns by countries are even more striking on the score of uniformity in directions of change. Steadily rising differences in life expectancy have been the clear rule at all stages of the life cycle since at least 1930. Practically without exception for any country and between any pair of the dates beginning with 1930 in appendix table A.III.1, the excess of female over male expectation of life rises steadily at ages 0, 30 and 65.[18]

A convenient way of summarizing age-specific mortality differentials by individual countries is provided by the indexes in table III.9. Each index represents the geometric mean of the ratios of female to male age-specific death rates for the cited area and period.[19] Values below unity indicate that the age-specific rates for females are on average below the corresponding rates for males and declining ratios over time imply widening sex differentials favouring females. Values over unity and rising ratios would have the opposite significance.

As is immediately seen, every index in each year falls considerably short of unity, the values ranging between about five-sixths (Ireland 1950) to under one-half (Finland 1970). On average, therefore, the ratio of national female to male age-specific mortality has varied within much the same limits as shown earlier for regions in table III.4. Moreover, since the ratio fell both in 1950-1960 and 1960-1970 in each of the 25 countries listed (including England and Wales if more decimal places are used), the record of movement to ever-widening differentials is no less uniform.

TABLE III.9

Geometric mean of ratios of female to male age-specific mortality rates, in 25 countries, about 1950, 1960 and 1970 [a]

Region and country	*1950*	*1960*	*1970*
Eastern Europe			
Bulgaria	0.79	0.74	0.65
Czechoslovakia	0.67	0.60	0.56
German Democratic Republic	0.74	0.68	0.63
Hungary	0.76	0.70	0.60
Poland	0.72	0.65	0.57
Romania	0.80	0.76	0.69
Northern Europe			
Denmark	0.79	0.67	0.64
Finland	0.65	0.55	0.48
Ireland	0.87	0.76	0.70
Norway	0.69	0.59	0.52
Sweden	0.76	0.68	0.62
United Kingdom:			
England and Wales	0.74	0.63	0.63
Northern Ireland	0.81	0.67	0.62
Scotland	0.70	0.65	0.62
Western Europe			
Austria	0.73	0.58	0.55
Belgium	0.70	0.61	0.59
France	0.70	0.61	0.56
Germany, Federal Republic of	0.75	0.63	0.59
Netherlands	0.78	0.66	0.61
Switzerland	0.71	0.59	0.56
Southern Europe			
Greece	0.79	0.73	0.66
Italy	0.79	0.68	0.61
Portugal	0.75	0.68	0.63
Spain	0.78	0.71	0.63
Yugoslavia	0.84	0.83	0.68

Sources: See table III.1.

[a] For definition of geometric mean, see chapter III, foot-note 19.

Only at a finer level of analysis do important regional or national variations become apparent. Thus, where the 1960-1970 declines in ratio tended to be below the 1950-1960 decreases throughout western Europe and much of northern Europe (Finland being the only significant exception), the reverse pattern was more likely to be true of the eastern and southern regions. This general relationship between successive decadal changes and starting mortality levels suggests that the countries with relatively low mortality for females may be approaching a boundary kind of limitation that is preventing still further widening of differentials. If this proves to be the case, the recent tendencies to an accelerated widening of differentials in a number of southern and eastern populations might become reversed. On the other hand, if significant increases in male mortality were to occur, even if accompanied by little or no decrease in mortality among females, accelerated declines in ratios could be encountered in all regions.

Finally, it will be noted that the magnitudes of changes in the ratios do not indicate any clear alignment by regions, relatively small and large shifts being encountered in all regions. At the same time, the size of the ratios has tended to be consistently largest in southern Europe and lowest among western populations. These mixed patterns suggest that significant cultural differences may be relevant in addition to limits on medical technology.[20]

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[18] More complete series by country show that these tendencies go back to at least the 1920s and often further.

[19] The geometric mean is used here because of its special advantages for summarizing ratios. It is defined as the *n*th root of the product of *n* terms, where each term consists of the ratio of a female mortality rate to the corresponding male rate for a given age interval and *n* intervals are being used to describe the full range of ages.

The data used for table III.9 are more inclusive than those for nine countries in appendix table A.III.4.

E. Causes of death

1. *Relative importance*

The decades since 1950 have seen the virtual elimination of communicable diseases (including tuberculosis) as major causes of death. A major scourge of European civilization through the centuries, such diseases today rarely, if ever, account for more than 5 per cent of deaths. The largest such percentage for either sex in any country as of the late 1960s, was 6.7 and the second largest was 4.5, among males in Poland and Portugal, respectively (see first two columns of table III.10). In much of the rest of eastern and southern Europe the percentages ranged from about 2 to 4 per cent for males and 1 to 3 per cent for females, while in northern and western Europe the magnitudes were even lower, rarely exceeding 2 per cent among male populations and often being less than 1 per cent among females.

Respiratory diseases, another leading killer in the past whose relative importance has declined greatly, is still a major cause of death in all regions, exceeding 10 per cent for one or both sexes in Bulgaria, Czechoslovakia, Romania, Ireland, all parts of the United Kingdom and Portugal, while approaching this level in Belgium, Greece and Italy. Only a few populations, all female, show percentages below 5 per cent.

By far the most important recent causes of death almost everywhere have been heart diseases and cancer, with cerebrovascular lesions of the nervous system the

TABLE III.10

Distribution of deaths by cause, by sex, in 23 countries, 1965-1969

(*Proportions per 1,000 deaths*)

Region, country and sex	*Cause of death code*											
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
Eastern Europe												
Bulgaria												
M	20	6	178	12	165	149	85	152	32	30	85	86
F	9	5	139	17	239	170	118	133	22	18	32	100
Czechoslovakia												
M	15	5	218	16	103	209	110	105	41	25	99	54
F	8	5	192	33	148	193	169	79	39	21	52	63
Hungary												
M	29	5	192	19	131	227	120	56	40	21	92	68
F	12	4	187	22	173	231	166	40	37	15	50	64
Poland												
M	58	9	173	29	35	112	186	76	45	18	102	158
F	23	9	184	29	53	97	248	58	41	14	38	207
Romania												
M	33	12	142	18	116	124	135	180	54	25	86	76
F	15	11	126	18	165	148	192	178	38	14	33	62
Northern Europe												
Denmark												
M	2	3	214	18	97	334	77	60	32	29	80	54
F	2	4	238	26	128	278	100	47	39	28	58	54
Finland												
M	15	3	180	14	106	316	82	71	26	22	119	46
F	7	3	163	31	180	242	148	60	32	31	49	53
Ireland												
M	8	3	165	14	115	260	118	160	21	22	48	665
F	5	4	171	22	161	195	149	143	20	15	34	79
Norway												
M	5	3	181	16	135	300	61	68	25	27	72	106
F	3	3	196	19	188	229	85	88	29	17	43	100

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[20] The instability of relative changes among low mortality measures, noted earlier, should be kept in mind in this connexion. However, the importance of this element is diminished by the presence of large upper-age mortality rates among the ratios being averaged.

Table III.10 (*continued*)

Distribution of deaths by cause, by sex, in 23 countries, 1965-1969

(*Proportions per 1,000 deaths*)

Region, country and sex	*Cause of death code*											
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
Northern Europe (continued)												
Sweden												
M	5	3	189	23	96	333	87	69	40	27	83	43
F	3	3	203	32	134	283	118	72	43	21	44	44
United Kingdom:												
England and Wales												
M	5	3	210	12	109	285	90	153	25	17	47	44
F	2	3	187	22	173	234	134	116	27	14	37	52
Northern Ireland												
M	5	4	168	13	112	316	99	128	24	18	46	66
F	3	4	167	23	173	251	138	101	27	15	31	67
Scotland												
M	6	3	207	13	125	315	71	114	27	16	55	49
F	3	3	185	25	203	266	109	75	27	15	37	52
Western Europe												
Austria												
M	18	4	208	15	120	190	101	83	68	28	95	70
F	7	4	203	27	170	184	139	66	55	20	52	73
Belgium												
M	11	4	203	21	105	161	169	91	35	19	74	107
F	33	4	189	50	142	114	216	54	37	14	52	126
France												
M	16	6	211	18	107	81	133	68	69	18	100	174
F	7	6	184	29	144	66	167	69	48	10	63	207
Germany, Federal Republic of												
M	14	3	199	23	128	189	95	78	61	32	85	95
F	5	3	211	36	178	148	128	54	55	19	55	108
Netherlands												
M	2	4	246	19	100	252	81	67	32	27	76	94
F	1	4	241	40	145	195	117	46	38	20	57	97
Switzerland												
M	10	5	215	27	99	214	107	61	53	26	107	75
F	6	6	202	42	142	212	147	49	40	20	57	76
Southern Europe												
Greece												
M	21	10	186	34	107	105	78	87	60	38	67	209
F	8	10	138	41	159	91	99	87	43	28	37	259
Italy												
M	15	6	186	19	123	174	123	98	70	23	68	95
F	5	6	172	35	153	178	173	80	47	13	32	107
Portugal												
M	37	12	108	13	144	112	45	129	100	25	74	200
F	13	10	110	17	191	124	53	110	72	19	29	251
Yugoslavia												
M	32	13	114	9	73	101	105	69	44	18	90	333
F	17	12	104	12	96	113	131	61	31	15	33	374

Note. Categories of causes are as follows: 1. Tuberculosis; 2. Other communicable diseases; 3. Malignant neoplasms; 4. Allergic, endocrine, blood diseases; 5. Cerebrovascular lesions of the central nervous system; 6. Ischaemic heart disease; 7. Other heart and circulatory diseases; 8. Respiratory diseases; 9. Digestive system diseases; 10. Nephritis and other genito-urinary diseases; 11. Accidents and violence; 12. All other (including ill-defined) causes.

leading cause in scattered instances. The situation in parts of southern Europe, though obscured by the large fractions of deaths from ill-defined or undiagnosed causes, again shows very high or highest percentages for heart diseases and cancer among diagnosed deaths. Each of the 23 countries cited in table III.10 shows at least 10 per cent of both male and female deaths reported as caused by malignant neoplasms and practically all report at least this percentage for both ischaemic heart disease (France being the main exception) and cerebrovascular lesions (where Poland stands out with a most atypically low fraction). Other heart and circulatory diseases also appear to be currently above the 10 per cent mark in most countries, while the respiratory diseases category reaches that level in about one-third of the cases.[21]

The proportion of deaths attributed to accidents and violence tends to be highly variable, approaching 10 per cent among all east European and most west European male populations, and exhibiting generally lower but dispersed levels among males in other regions.

Two outstanding aspects of the comparative distributions for males and females are the expected higher shares of accidents among total deaths of males and, conversely, the consistently higher share of other heart and circulatory diseases among females. The latter group of causes is the only one whose share is higher among women than among men. The approximately equal proportions found for malignant neoplasms, despite much higher male age-specific risks of dying, is explained by the fact that the measures discussed until now are fractions relating to the total number of deaths, rather than rates relating to population.

2. *Probabilities*

Although the foregoing distributions are affected by age composition,[22] which might in principle distort the patterns compared with the position when age factor is held constant, age-independent measures are found to yield patterns remarkably similar to the ones just indicated. Calculations of lifetime probabilities of dying by individual cause (assuming zero deaths from all other causes) reveal practically the same rankings as do the distributions of table III.10.[23] Both approaches suggest that the five groups of causes singled out previously —malignant neoplasms, cerebrovascular lesions, ischaemic diseases, other heart and circulatory diseases plus accidents and violence—accounted for about 50 to 70 per cent of mortality in southern Europe, 60 to 80 per cent in eastern Europe, and 70 to 80 per cent in both northern Europe and nearly all of western Europe (France showing a level of 60 to 70 per cent). With respect to most important cause of death, the only noteworthy shift from the rankings shown in table III.10 was in the case of female populations in northern Europe, for which malignant neoplasms tended to replace ischaemic diseases as leading cause.

Regional differences in the lifetime probabilities of these five major causes of death varied greatly in pattern. Neoplasms provide instances of high rates for males in all regions, such as the cases of Czechoslovakia among the eastern countries, Finland and England and Wales in northern Europe, Austria and Belgium among western populations, and Italy in southern Europe. The corresponding female rates for this cause show consistently lower rates everywhere, typically by considerable margins, as well as limited variability among regions.

In the case of cerebrovascular lesions, unusually high male death probabilities are found in Bulgaria, Czechoslovakia and Portugal, with Hungary, Finland, Scotland and Austria not much lower. Since male-female differences for this cause tend to be low, much less than for the other four sets of causes, these countries tend also to be the ones with comparatively high female rates.

Ischaemic diseases tend to be highest for each sex in the northern countries, with an unusually high rate also in Czechoslovakia. Nearly all national male-female differences are substantial. Other heart and circulatory diseases show lowest risks of dying among northern populations of both sexes and comparatively high risks in Poland, Romania, Spain and Yugoslavia. Here again, female risks are consistently below those for males, though sometimes by small amounts.

Finally, accidents and violence show instances of relatively high probabilities for males in parts of all regions, notably Czechoslovakia, Hungary, Finland, Austria, France, Switzerland and Yugoslavia; interestingly, low national rates for males are also to be found in all regions. Female rates everywhere tend not only to be below those for males but also to show no significant regional variations.

The diversified nature of these patterns suggests two general conclusions. One is that the areas with the highest length of life, such as the countries of the northern region, do not show lower mortality risks for all leading causes of death. Indeed, they may on occasion appear to be on the high side of Europe's international distributions of death rates by cause. The second is that an undetermined, but probably not small, part of the apparent differentials according to the causes on record is the product of variations in statistical practice and accuracy.

3. *Age-specific tendencies*

All of the five leading causes of death just discussed share the characteristic that their age-specific rates rise steadily from about the age of 10. Some, such as malignant neoplasms or accidents, tend to show a local peak at the childhood ages (1 to 5), and then a perceptible dip, before the steady rise of rates begins; such functions of age tend to resemble a J-shaped curve, as shown in figure 3.[24] In other cases, such as those of cerebrovascular lesions and heart diseases in some countries, the rates either rise immediately or do not fall before beginning a steep ascent. For all causes except accidents, the rates for the upper-middle to advanced ages (45 to 74) are high multiples of those in the young to middle-adult period (25 to 44), and in turn are far exceeded by the rates at still older ages (75 and above). The main exception to these pronounced patterns, accidents and violence, is not unexpected in view of its frequent incidence at all ages and even here the exceptions are only occasional.

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[21] All terminology in the text and tables is from the most recent 1965 International Classification of Diseases used by WHO. Changes from terminology in the preceding (1955) classification include the use of "ischaemic" for the earlier "arteriosclerotic" and "cerebrovascular" for "vascular".

[22] For example, an increasing fraction of population in the old ages would raise the share of deaths from older-age diseases to total deaths even if the rates of dying by cause remained constant in each age-group.

[23] For reasons of space and because of their broadly indicative nature, the relevant data, which have been derived from the WHO data bank and which refer to the probability of dying from birth to age 75 by single causes of death, are not shown here.

Bearing in mind the high percentage of total deaths represented by these cause-of-death categories, the data help to clarify some underlying reasons for the direction, size and changes of recent male-female differentials in age-specific mortality, as well as for the divergent male and female trends in expectation of life.

As to direction, the great preponderance of female age-specific rates were below their male counterparts in both 1960 and 1970, the main exceptions being the higher rates found among females aged 25-44 for neoplasms and among those aged 75 and over for cerebrovascular lesions, other heart diseases and accidents. Higher female rates sometimes found for ages under 25 can be regarded as non-significant for all categories other than accidents and violence, in view of the erratically small numbers of deaths involved. Far more typical, however, were the higher rates encountered among males in all five categories, at practically all ages and in all regions. Not infrequently, the margins of such differences were very substantial, while a clear tendency toward widening differentials is apparent from the large fraction of declining ratios among female age-cause-specific rates when compared with their male counterparts. Only accidents and violence show a counter-tendency in this regard, with most ratios rising between the beginning and the end of the 1960s (though remaining well below 1 per cent as a rule). For the other categories, the great majority of 1970 ratios at ages 25 and above either declined below the already low 1960 levels or, at a minimum, failed to show significant variations. Particularly marked declines in ratios were registered between 1960 and 1970 in the case of heart disease within the 25 to 44 age-interval, reflecting sometimes a combination of increases in rates for males with decreases for females.

A look at the rates from the standpoint of changes over time supports the view that rising mortality during the 1960s was not an isolated event in terms of country, age, sex or cause. Rates for malignant neoplasms tended to rise among males in the middle or upper adult ages in all regions, and among females in all regions except western Europe. At ages 25 and over rising rates from ischaemic and other heart diseases were apparently widespread among western and northern males, while increases in other heart and circulatory diseases took place, often among both sexes, in at least eastern and southern Europe. Accidents and violence show rising rates over a wide range of ages for male and female populations in all parts of the continent. Most countries experienced rising rates for either sex from cerebrovascular causes, though with more scattered incidence than for other causes at and beyond age 25. Each of the eight countries examined showed some rising rates in the adult ages for at least two cause-of-death categories in addition to accidents. Only the ischaemic rates for females show a persistent tendency to decline at all, or practically all, ages throughout the continent.

4. *The infant year*

As noted earlier, the first year of life has differed from later ages over the past two decades in its pronounced and uninterrupted tendency to declining mortality everywhere in Europe. The endogenous and exogenous rates in table III.11 are intended to separate causes of infant deaths into two broad components, those arising from confinement (hence largely pre-natal) and those stemming from environmental (hence post-natal) causes, respectively.[25] Since exogenous measures are here defined operationally to be in fixed proportion to post-neonatal values, it need only be repeated that death rates from such causes have been greatly reduced during recent decades in all regions and are approaching near-zero levels in much of northern and western Europe (table III.7). Endogenous rates, on the other hand, which as measured combine post-natal environmental elements to some extent along with predominantly pre-natal influences, show much clearer resistance to change. Cases of only small declines or even of increases are not uncommon (though some may well be the result of statistical error).

Spatially as well, endogenous rates have tended to be relatively homogeneous within and between regions, in keeping with their comparative inflexibility under varying socio-economic circumstances. At the same time, it must

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[24] To prepare figure 3, the selection of a country for each cause of death was made in essentially random manner, except that one country was to be picked from each region. The number of causes and countries was equalized by excluding the ischaemic category; this is the only classification for which the change between the 1955 and 1965 WHO International Classification of Diseases systems posed questions (fortunately secondary ones) of comparability between 1960 and 1970.

[25] The definitions used here follow those of J. Bourgeois-Pichat, "La mesure de la mortalité infantile", *Population* (Paris), vol. 6, No. 2 (April-June 1951), pp. 233-248, and No. 3 (July-September 1951), pp. 459-480; see also his "An analysis of infant mortality" in United Nations, *Population Bulletin* (United Nations publication, Sales No. 1952.XIII.4), No. 2 (October 1952), pp. 1-14. Exogenous is assumed to include all post-neonatal deaths (second to twelfth months of life) plus another one-fourth of this total to allow for deaths from environmental causes in the first month of life. All other infant deaths are defined as endogenous. Accordingly, such an exogenous rate in table III.11 equals 1.25 times the corresponding post-neonatal rate in table III.7, while each endogenous rate equals the infant mortality rate minus the exogenous rate. The reason for using these approximations is that direct information on infant deaths by cause is often less readily available than are data on month of death. Cause data, in addition, are often obscured by large numbers of cases reported as ill-defined or unknown.

FIGURE 3

Age-cause-specification rates, by sex, for four causes and four countries, about 1960 and 1970

Cerebrovascular lesions in Poland, malignant neoplasms in Sweden, accidents and violence in France, and other heart and circulation diseases in Italy

(Death rates per 100,000 population of given age and sex)

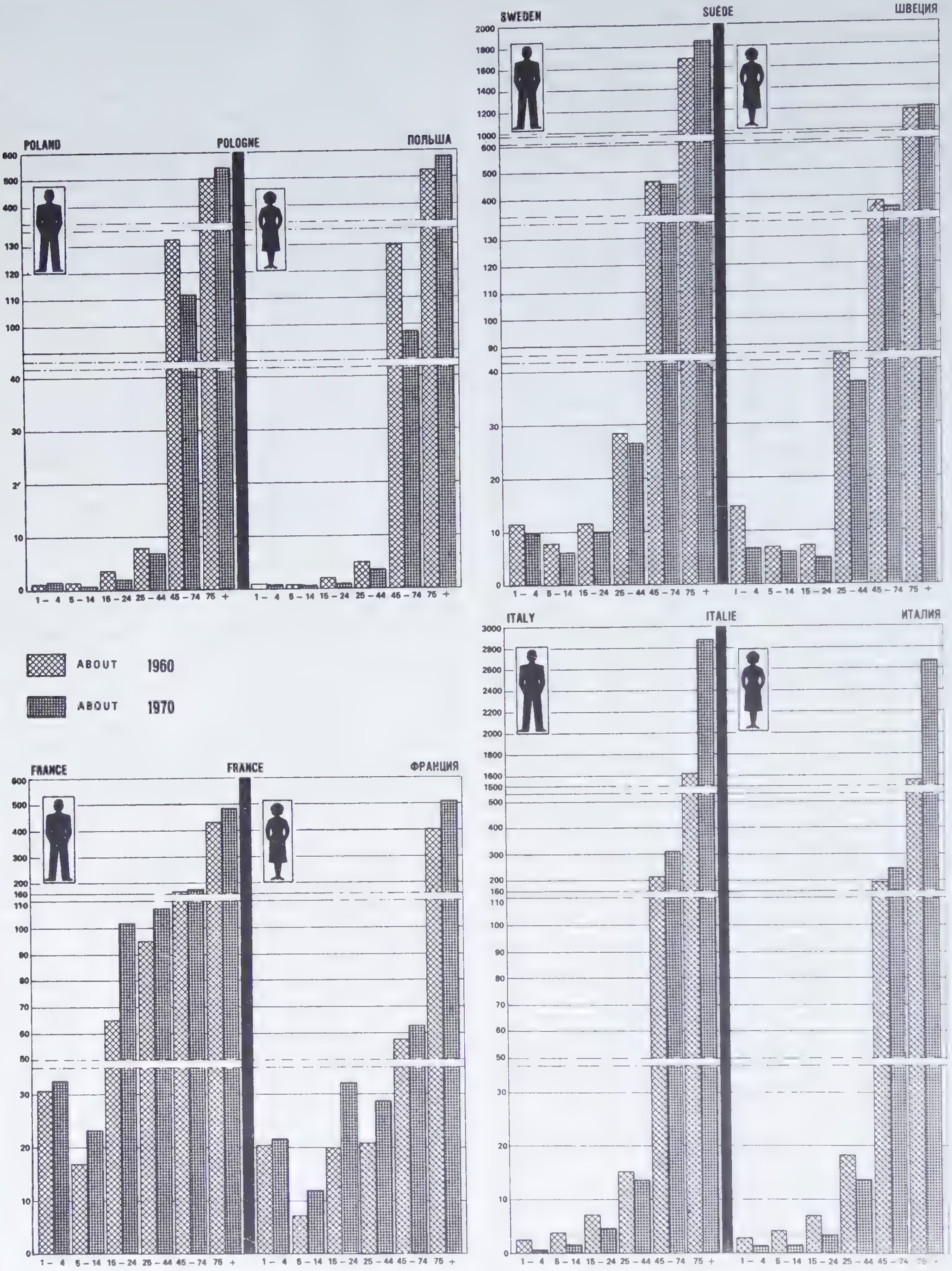

TABLE III.11

Endogenous and exogenous infant mortality rates, in 23 countries, about 1950, 1960 and 1970

(*Per 1,000 live births*)

Region and country	*Endogenous*[a] *1950*	*1960*	*1970*	*Exogenous*[a] *1950*	*1960*	*1970*
Eastern Europe						
Bulgaria	27.9	13.4	9.7	68.9	32.9	17.9
Czechoslovakia	21.9	11.2	13.9	53.4	12.8	8.6
German Democratic Republic	22.4	15.4	12.2	47.9	22.4	7.5
Hungary	24.9	22.0	26.2	54.9	26.0	9.3
Poland	43.9	19.3	15.8	66.1	41.6	16.6
Romania	47.1	7.3	13.9	71.0	67.5	35.0
Northern Europe						
Denmark	15.4	15.0	11.1	16.0	6.9	4.0
Finland	16.2	13.1	9.4	26.3	8.8	3.5
Ireland	18.3	19.0	12.7	30.1	11.6	7.8
Norway	11.2	9.8	9.7	16.0	8.8	4.1
Sweden	14.5	12.9	8.6	7.5	3.4	3.1
United Kingdom	17.3	15.6	11.1	14.9	7.0	7.3
Western Europe						
Austria	27.8	20.7	17.2	40.4	16.0	8.6
Belgium	22.0	16.9	12.8	31.5	13.0	8.4
France	15.9	13.0	8.2	38.4	14.5	11.4
Germany, Federal Republic of	29.3	21.0	15.9	26.5	12.3	7.5
Netherlands	14.4	10.8	8.3	11.3	5.4	4.0
Switzerland	19.1	14.9	10.5	12.8	6.5	5.0
Southern Europe						
Greece	14.5	14.3	17.0	29.1	25.9	12.5
Italy	22.6	18.3	17.4	45.5	25.0	12.0
Portugal	16.5	17.0	16.1	82.8	68.0	37.8
Spain	11.5	14.7	9.3	59.4	31.4	20.8
Yugoslavia	28.4	20.7	17.1	92.8	66.5	39.9

Sources: See table III.1.

[a] For definitions see chapter III, foot-note 25.

be kept in mind that what has often appeared to be beyond environmental control in an earlier decade has yielded to later innovations.[26]

F. Summary and prospects

The decades since the Second World War have witnessed a substantial reduction of inter-regional and intra-regional mortality differences within Europe. All areas registered considerable gains in length of life, but the largest by far were in the traditionally higher-mortality regions of eastern and southern Europe, particularly during the 1950s. In the 1960s, though the gains in these regions again exceeded those among northern and western populations, practically all of Europe experienced a marked deceleration of trends. The chief immediate reasons almost everywhere appear to have been the limited leeways for further gains after 1960 as a result of very low mortality levels from infant through middle adult years already achieved over most of the continent, and the limited gains possible in upper-age longevity under current medical technology and health conditions.

A simple, yet illuminating way of viewing the situation today is to consider the maximum possible gains in length of life that could occur if mortality in future were to disappear at all ages under 50 or 65. The greater the past declines in a population's mortality below either of these ages, the smaller must be the maximum future gains before the absolute limit of zero mortality is reached and the greater the importance of the trends above the selected ages of 50 and 65 years. This simple relationship therefore affords a sensitive indication of how past trends in Europe have defined the scope for future possible trends.

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[26] For an analysis of more detailed causes of recent infant deaths by region, see the joint study by the United Nations and WHO, *Mortality in infancy and childhood* (ESA/P/WP.47, 28 February 1973). As might be expected from the preceding neonatal and post-neonatal comparisons, as well as from those between endogenous and exogenous rates, eastern and southern Europe were clearly distinguished from the northern and western regions by their higher infant death rates from infectious, parasitic and respiratory diseases. Southern Europe stood out from the other three regions by reason of its high rates of death from ill-defined or unknown causes and eastern Europe did so by its rate for birth injuries, for which the other regions indicated much lower levels. Northern Europe, though having the lowest over-all infant mortality rates anywhere on the continent, nevertheless had the highest rate in any region from prenatal asphyxia and atelectasis.

Differences in trend between communicable and non-communicable causes were also found to be pronounced. For example, between the late 1950s and middle 1960s, there were substantial declines in infant death rates from infective and parasitic diseases, among others, but little or no change from congenital malformations, birth injuries or post-natal asphyxia and atelectasis. Most countries experienced a rise in the rates due to accidents.

A statistical measure which reflects an assumption of zero mortality under 50 and fixed mortality risks thereafter is simply current expectations of life at age 50 of more than 50 years. The former merely indicates that there is no loss of life below 50; the second term measures the added longevity beyond 50 resulting from a continuation of current age-specific mortality conditions at later ages.

Specifically, since recent male life expectancy at age 50 in Europe has ranged between about 21 and 26 years, elimination of under-50 mortality would imply a corresponding range of 71 and 76 years in the national values of expectation of life at birth. For females the corresponding range of 26 to 30 years would imply total longevities ranging from 76 to 80 years. Table III.12 presents the results by individual countries.[27]

Subtracting actual expectations of life at birth about 1970 from the corresponding zero-mortality value yields the maximum gain still possible under maximum longevity to age 50. Among male populations of northern and western Europe, the maximum increases presently possible in total longevity with the disappearance of under-50 mortality would only be between about 4 and 6 years. For females, the possibilities would be even smaller and more narrow in range, or about 3 to 4 years. In eastern Europe, the corresponding measures, though higher, are nevertheless only about 5 to 8 years for males, and 4 to 7 years for females, while in southern Europe the range for both sexes suggests orders of magnitude of between 5 and 10 years. The USSR appears to belong to the east European ranges of values.

A comparison of these hypothetical maximum gains in expectations of life at birth with actual gains dramatically illustrates why the momentum of past trends cannot be sustained.[28] Without exception in any region of Europe, the hypothesized maximum gains for females are less than the actual gain since as recently as 1950. Indeed, only Norway and Denmark show approximate equality. Every other case, involving approximately two dozen countries, showed actual 20-year changes which were well above the maximum changes still possible under the assumption. The largest excess of actual 1950-1970 gains over possible ones are found among countries of eastern and southern Europe, as might be expected from their relatively large actual trends.

TABLE III.12

Male and female expectation of life at birth assuming zero mortality under ages 50 or 65, in 27 countries, about 1970

(Values to nearest full year)

Region and country	*Zero mortality under age 50* [a]		*Zero mortality under age 65* [a]	
	Males	*Females*	*Males*	*Females*
Eastern Europe				
Bulgaria	75	77	78	80
Czechoslovakia	72	77	77	80
German Democratic Republic	74	78	78	81
Hungary	73	77	77	80
Poland	74	78	78	80
Romania	74	77	78	79
Northern Europe				
Denmark	75	79	79	81
Finland	71	76	76	79
Ireland	73	77	77	80
Norway	76	78	79	81
Sweden	76	79	79	81
United Kingdom:				
England and Wales	73	78	77	81
Northern Ireland	73	77	77	80
Scotland	72	77	77	80
Western Europe				
Austria	73	78	77	80
Belgium	73	77	77	80
France	74	79	79	82
Germany, Federal Republic of	73	78	77	80
Netherlands	75	79	79	82
Switzerland	74	78	78	81
Southern Europe				
Albania	76	79	80	81
Greece	77	80	80	82
Italy	74	78	78	81
Portugal	74	78	78	80
Spain	74	77	78	80
Yugoslavia	73	76	77	79
USSR	73	80	78	82

Sources: See table III.1; some life tables calculated by the ECE secretariat.

[a] Values equal 50 or 65 plus life expectancy at age 50 or 65 according to life table about 1970. See chapter III, foot-note 27.

For males, the comparisons are somewhat less simple, though similar in essentials. In eastern and southern Europe the majority of male populations again show, and again by a very considerable margin as a rule, higher actual 20-year gains since 1950 compared with the posited maxima. Only Czechoslovakia, as a result of declining male life expectancy during the 1960s, and possibly Greece and Italy, appear as exceptions. In northern and western Europe, however, an opposite tendency appears.

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[27] Measures of life expectancy at age 50, and even more those at age 65, are undoubtedly overstated for a number of countries. However, since such biases are also reflected in the corresponding measures of expectation of life at birth, the errors in maximum gains cited below are somewhat reduced.

[28] The comparisons discussed in this section include all populations of northern and western Europe, and nearly all from the eastern and southern regions. From various indirect indications, there is no reason to suppose that the few countries omitted render necessary any qualification of the main conclusions.

Because of generally very limited improvements in life expectations over the past two decades, no northern country shows a higher 1950-1970 actual gain for males compared with what could be achieved with zero under-50 mortality. Similarly, most populations of western Europe show lower actual than maximum possible gains, though Belgium and France are exceptions.

All of these qualifications disappear, however, if a somewhat longer period of actual gains is applied for males. Throughout Europe without exception, the maximum gains currently possible for males are far below the actual gains of the last 30 or at most 40 years. Northern and western Europe, for example, show actual 1930-1970 gains which are double the calculated maxima or more and the discrepancies are much greater still in the other two regions.

In brief, female mortality in Europe has reached a point where trends in length of life over even so short and recent a period as 1950-1970 can only be matched in future, if at all, as a result of very substantial gains in upper-age longevity. For males, essentially the same conclusion holds with respect to trends over the latest 30, or at most 40 years.

The results are, if anything, even more striking under the much more dramatic assumption that mortality in Europe should disappear at all ages under 65, or roughly the age for retirement. For females, the maximum gains implied by the elimination of under-65 mortality would still be matched or exceeded by actual 1950-1970 increases throughout eastern Europe and in the case of practically all populations in western and southern Europe. Only for northern Europe does one have to examine periods commencing somewhat earlier to find correspondingly large actual gains. In practically every case, including all northern populations, actual changes in female life expectancy since about 1930 have been at least twice as high as the hypothesized maxima.

For males, the actual 1930-1970 gains exceed or very nearly equal the corresponding maxima in all but a single case.[29] Once again, therefore, the conclusion is clear that past gains in length of life cannot be even approximated in Europe in the absence of enormous increases in longevity at very high ages.

These conclusions, though theoretical, cast light on a related theme. It is often claimed that modern science and society are not far from the time when people can expect to live 100 years or longer, which implies a rise in life expectancy above today's values which is roughly the same as was experienced by most European populations over their entire mortality transitions since 1850. However one assesses the probability of such a development, it is clear from the foregoing that its occurrence could not significantly depend upon mortality changes before the very late ages. The great bulk of a rise in life expectancy of another 30 years or so would have to come from major declines in mortality beyond age 64 and extending well beyond age 100. Only about one-fourth of an increase for males to the 100-year level, and one-fifth of such an increase for females, could arise from declines below age 65.

Much the same type of inference is relevant for prospective trends in age-specific mortality and causes of death. Since national mortality rates at younger ages have often dropped by over 50 per cent during the last two to four decades, it has usually become impossible for future downtrends to match the pace of the past, indeed of the quite recent past. The development of inevitable decelerating tendencies has been particularly apparent in eastern and southern Europe, where the recent declines in mortality have often been steepest. In northern Europe especially and also in western Europe, such rapid declines developed earlier, as did the tendency for the pace of improvement to slow down as minimum boundary levels were approached.

The interplay between the rapidity of past trends and the onset of necessarily curtailed further trends is probably nowhere more dramatically revealed than in the case of infant mortality, in particular its post-neonatal component. Practically everywhere in all regions, the 20-year changes alone to 1970 have tended to be far greater than the levels prevailing today and hence are well beyond the maximum changes still possible.

Similarly, recent distributions of deaths by cause and the sheer smallness today of many cause-of-death probabilities reflect trends whose very strength has presaged their disappearance. Communicable diseases everywhere —once the great killers—have come to have only marginal significance, accounting for small or even trivial fractions of deaths and less than accidents and violence, a non-disease category. Mortality rates from respiratory diseases can still be lowered from not inconsiderable levels, though such diseases have also become submerged in relative importance by new leading causes of death. Only sharp reductions in mortality rates from heart diseases, cancer and the cerebrovascular diseases can lead to major future gains in life expectancy (not only at birth but at later ages as well).

The last point emphasizes a contrast between what has been happening to mortality at upper ages and what must happen if these age groups are to become the main carriers of change in European life expectancy. Far from giving evidence of gathering momentum in a downward direction, male mortality at the advanced ages and not infrequently at some young adult ages may be at a standstill or may even be rising to some extent. Male expectation of life at 30 (a high enough age to be sensitive to old-age mortality rates while also low enough to reduce the effects of statistical errors in measures of such rates) shows practically no change or even small declines in all regions. The same pattern is revealed by the data on male expectations of life at age 65, though the reliability of the available documentation for some areas is open to question.

In both instances, the widespread appearance of declining or, at least, not rising longevity for a major sex-age segment of the population may well be the first such phenomenon in Europe's mortality history over the past century or longer.

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[29] The exception is the Federal Republic of Germany, for which the 1930-1970 actual change of about 7.5 years for males compared with a calculated maximum gain of 9.5 years. Even here, however, the actual 1925-1970 trend came to nearly 11.5 years.

For females, later-age longevity has continued to increase in all parts of the continent, but has done so in only a limited manner. At age 30, for example, the 1960-1970 increases in life expectancy by region were lower in three regions than the 1950-1960 increases. At age 65, the comparisons run both ways, with possibly some acceleration in northern and western Europe. But in all cases the trends have been far from suggesting a breakthrough in the control of degenerative diseases.

A main immediate corollary of the diverging trends for males and females has been steadily rising discrepancies between both their total life expectancies and many age-specific mortality rates. Such differences are currently at the highest peacetime levels ever recorded in any region, and indeed in any country in Europe.

Europe's progress to today's life expectations of over 70 years has been among the most significant and widespread social forces in her modern history. Reciprocally, the current strong tendencies toward a lull, in the form of sharply decelerated or even stagnating trends, are bound to have profound, if as yet largely unnoted, repercussions. One need only contrast the effects of today's anticipated lack of major future movements with those that would emerge as a consequence of further 10 to 15-year increases in length of life by 1990-2000. An improvement of the latter dimensions merely corresponds to the gains observed in many countries over the last 20 years, but given the current European mortality schedules, it should be re-emphasized that a pronounced upsurge in length of life of anything like the magnitudes encountered during this century would necessarily entail gains in longevity beyond the ages 70 or 75 for males and 80 or 85 for females, far beyond any witnessed so far in any country.

A second, almost converse, alternative is that mortality might rise and longevity fall, particularly at the upper-adult years and perhaps at the younger-adult years as well. This possibility can no longer be ruled out, at least in the cases of males; certainly its likelihood as suggested by the facts seems higher today than at any earlier peacetime period during this century. Or again, longevity and its associated age-specific mortality rates might develop primarily fluctuating patterns of movement, in which gains and setbacks would alternate over any sustained trend.

Any of these possibilities could have major social, economic and political consequences—on labour force, housing, savings, consumption, family composition, health care, fiscal policy, voting behaviour and, perhaps most generally and profoundly, on quality of life itself.

Chapter IV

NUPTIALITY

A. Introduction

Marriage patterns are changing rapidly in some parts of Europe while remaining stable in others. The result is a mosaic of transitions and continuities, which makes distinction between enduring or ephemeral patterns unusually difficult. Whether the populations which have departed from earlier patterns will revert to these again, or whether those with little change in recent decades will increasingly evolve to new ones, cannot be assessed with confidence; but the facts no longer rule out the possibility that major questions of change may be at stake, possibly involving the survival of the traditional family unit, and in any event having central policy and behavioural implications for fertility, the role of women, labour force and housing, among other factors.

Precisely because assessment is so difficult today, the need for an adequate data base has become commensurately enhanced and the shortcomings of available sources more patent. Available data on nuptiality tend to lag considerably behind those on mortality and fertility, as do the methods and models that exist for assessing statistical accuracy or drawing interpretative conclusions.[1]

Two distinctions in particular need to be emphasized in this connexion, both of which take on special importance in periods of actual or potential transition. The first is between the marital composition of the population at particular dates and the numbers of marital events through time. The two approaches do not necessarily yield the same results. For example, the percentage of a population which is divorced may show little change between successive censuses, even though numbers and rates of divorce are rising rapidly; both phenomena could co-exist provided re-marriages are also rising. Similarly, mean age of the ever-married may be falling, while that of current marriages is rising, the former as documented by census enumerations and the latter by vital statistics.[2] The distinction in each example corresponds to the familiar stock-flow contrast found useful in economics, with the number having a given marital characteristic in a census identifying a stock of such persons at a moment of time, and the numbers of shifts in marital status defining flows or rates of change over time. Unfortunately, though the latter types of data are more useful for signalling new directions of change and also can give fuller documentation on the gross amounts of shifts in marital status, they are typically poorer in socio-economic detail and comprehensiveness than the cross-sectional distributions found in censuses.

A second distinction which could have been more usefully explored with better data is that between period and cohort measures. Familiar mainly in fertility and mortality analysis, the distinction can become especially important in times of rapidly changing marriage behaviour, involving here specifically the timing of marital decisions.[3] In periods of alternating economic prosperity and recession, for example, decisions to speed up or postpone marriage may lead to significant fluctuations in period marriage rates even though cohort rates remain almost constant. Conversely, divergent decisions among birth cohorts concerning age of marriage could lead to period measures which appeared to be unchanging while real cohort behaviour is shifting. In period analysis, the percentage never married by a given date can be higher for an older age than a younger one and the sum of first-marriage rates can exceed unity (table IV.10), neither pattern being possible for a real cohort ageing over time. Accordingly, whether a rising or declining period marriage rate implies long-run changes in the proportions ever-married among marriage cohorts, a shift in the average age rather than in the probability of marriage, or merely a phase in fluctuation, can be an extremely difficult matter to determine. Indeed, just such uncertainties afflict judgement about developments in a number of European countries today, as detailed below.

Section B of this chapter deals with marital status, hence with the stock-type aspects of Europe's contemporary patterns of nuptiality. Succeeding sections then turn to flow aspects, specifically rates of first marriages, of remarriages and of marital dissolution as a result of divorce and widowhood. Trends, differentials and some socio-economic correlates of age at marriage are considered next, and section E contains conclusions and some delineation of prospects.

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[1] Many of these differences stem basically from two sources. The yes-no nature of dying and childbearing (granting that still-births are sometimes not easily distinguished from live births) contrasts sharply with the possibility of shifting back and forth among multiple marital statuses. In addition, laws enforcing birth and death registration are for various reasons far more likely to be stringent and complied with than are laws governing the registration of marital events.

[2] See section B sub-section 1 of this chapter for definitions of the various marital status categories.

[3] As throughout this report, cohort refers here to a group of individuals who have simultaneously experienced a given demographic event. Birth cohort measures, the most usual example, refer to people born in a given area and period who are being traced over successive calendar intervals. Marriage cohort, correspondingly, refers to persons married in a given place and time interval.

Period measures, in contrast, refer to data which combine the simultaneous behaviour of multiple birth cohorts during a given calendar interval.

As is well known, both types of measures can be deduced from an arrangement of data cross-classified by age and calendar period. Adding the data (say, numbers of marriages or births, or their rates per 1,000 population) over different ages as of a given time interval yields a period measure. Adding such data diagonally, i.e. over successive age and calendar intervals simultaneously, yields cohort measures.

B. Recent marital composition : patterns and trends

1. *Proportions single*

As conventionally treated in international statistical tabulations, the distribution of population by marital status concerns persons aged 15 and over and includes as main categories those who are single, currently married, widowed and divorced. The last three classifications constitute the ever-married population, after allowance is also made for separations and annulments. Persons who are separated are classified variably in Europe, sometimes being included with the currently married, more frequently tabulated as a distinct category, or occasionally combined with the divorced. Annulments, which are minor fractions of the population everywhere, are included with the single group.[4]

Depending upon the region, between about three-quarters and five-sixths of Europe's female population over 15 is ever-married, the corresponding range for males being between two-thirds and three-fourths. The remainder are the single or never married population. Eastern Europe as a whole, though not without some leading exceptions, continues to show, as traditionally, a distinctly lower percentage single, along with an associated lower age of marriage, than do the populations of northern, western and southern Europe.[5]

Regional contrasts in aggregate marriage propensities can be seen from both the actual percentages in table IV.1 and the corresponding standardized measures of table IV.2, the latter obtained by holding age composition constant within each country as of 1950.[6] In broad terms, the percentage single of each sex in eastern Europe has tended to be between about 5 to 10 points below the corresponding actual or standardized values for other regions during each of the main census years since the Second World War.

At the other end of the scale, the situation has been more variable. Data based upon unstandardized measures, indicated that southern Europe tended to show the highest average percentage of males and females who were single about 1950, but that northern Europe tended to move into that position during the next 10 to 20 years.[7] However, much of any apparent shift was compositional in origin rather than behavioural, for with age composition held constant, the largest fractions single amongst males and females—hence the smallest fractions ever-married—have more consistently been found in the southern region.[8]

It follows, since eastern and southern Europe are both at the low end of Europe's regional income scales, that Europe's marital propensities are clearly associated more closely with cultural factors than with particular stages of economic development or *per capita* income.

Nationally, comparatively low percentages single throughout the post-war decades have been encountered in Bulgaria and the German Democratic Republic in eastern Europe; in England and Wales among the northern populations; in Belgium and the Federal Republic of Germany in the case of males and in Belgium, France and the Federal Republic of Germany in the case of females in western Europe; and in females in Yugoslavia in the southern part of the continent. On the high side, by very substantial margins, compared with any part of the continent, have been Ireland and Northern Ireland, while Poland, Switzerland and Spain have been fairly consistently close to the top of their respective regions.

While some differences in pattern thus appear to have been fairly consistent, the trends according to both tables IV.1 and IV.2 make it clear that Europe experienced a great marriage boom, along with the more widely recognized baby boom, during much of the post-war period, particularly during the 1950s. During that decade, every country except France showed declining proportions single for both males and females in terms of unstandardized or actual measures. Although the decreases in actual proportions were partially a function of age composition throughout eastern and southern Europe, the declines in 1950-1960 become enhanced by allowing for age in most of northern and western Europe. Countries which experienced especially substantial declines in both actual and standardized terms and for both sexes were Czechoslovakia, the German Democratic Republic, Hungary, Ireland, Norway, Northern Ireland, Scotland, Belgium, the Federal Republic of Germany, Netherlands and Spain. In addition, countries which showed large declines in either unstandardized or standardized terms but not in both, or for only one sex, included Bulgaria, England and Wales, Austria, Switzerland, Greece, Portugal and Yugoslavia; among these only Yugoslavia, in the case of males, provide an instance of a 1960 proportion single which exceeds the 1950 proportion (in this case, after standardization).[9]

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[4] See United Nations, *Demographic Yearbook*, various years especially *Demographic Yearbook 1958*, *1968* and *1971* (United Nations publications, Sales Nos. 59.XIII.1, E/F.69.XIII.1 and E/F.72.XIII.1) on data; also *Demographic Yearbook 1958*, chaps. I and II.

[5] For a discussion of early twentieth century differences within eastern Europe and between this region and other parts of the continent, see J. L. Sklar, "The role of marriage behaviour in the demographic transition: The case of eastern Europe around 1900", *Population Studies* (London), vol. 28, No. 2 (July 1974), pp. 233-247. A comprehensive study of international marital patterns among European and non-European populations is in R. B. Dixon, "Explaining cross-cultural variations in age of marriage and proportions never marrying", *Population Studies* (London), vol. 25, No. 2 (July 1974), pp. 215-223.

[6] The use of age-standardized measures eliminate formally the effect of variable age structure in each country over time on the measures in table IV.1. Analysis of the complex social, cultural, economic or other determinants of such propensities is aided to the extent that age structure, an outcome of the past fertility, mortality and migration history of a population, can be held constant. A limitation of standardized measures is that both their levels and trends depend upon the particular age distribution selected as standard; such selection is necessarily arbitrary to an extent. Ideally, nuptiality tables could integrate the aggregative and age-specific indications taken up here piecemeal, much as was done by life tables in chapter III. However, the possibilities of constructing nuptiality tables are greatly reduced by the absence of requisite underlying data.

[7] Ireland excepted.

[8] Any difference between northern and southern Europe around 1970 would be very slight if Ireland were excluded. With 52.9 per cent males single in 1950 and 45.7 per cent single in 1970, Ireland was consistently 10 to 15 per cent above any other country. The proportions for females (42.8 in 1950 and 36.5 in 1970) were also by far the highest in Europe.

Two sets of contrasts, one backward-looking and one forward-looking, make the experience of the 1950s stand out in other ways. First, although a number of countries with records covering a longer period, in northern and western Europe especially, had shown previous tendencies for their proportions single to drift downwards, the very pace of the 1950-1960 changes often marked a pronounced departure from trend.[10] Ireland, Norway and the Netherlands are clear-cut examples.

A second set of contrasts, based on the 1950s and looking forward to the 1960s, suggests some reversals of longer-run trends which may be of considerable social and demographic importance. Although the majority of 1960-1970 changes in the proportion single were again in a downward direction, the patterns had become much more mixed than in the 1950s. In eastern Europe four male and three female populations showed rising proportions single in actual measures, as did two male populations in northern Europe, two male and one female series in western Europe and one male in southern Europe. Rising standardized proportions are less frequent, being confined almost entirely to males in several eastern countries, but in practically all of eastern Europe where comparisons can be made and in much of northern and western Europe, the declines in the 1960s were smaller than in the preceding decade. Whether these reversals of decelerations merely reflect bottoming out tendencies following unsustainably strong downtrends of the 1950s, or are the harbinger of newly developing uptrends, remains to be seen.[11] In either event, however, substantial further increases in the fraction of Europe's adult population which is single seem unlikely, judging from the evidence currently available.

If this assessment proves to be correct, it will mean that first marriage patterns will have assumed characteristics which are markedly different from those which had endured in Europe for a century or more before about the Second World War, with marriage occurring on average at relatively young ages and with higher proportions ultimately marrying. The flow data relating to trends in age at marriage are considered later: the question to be considered here is what changes were apparent in the marital status of the populations at specific ages.

2. *Age-specific comparisons*

A closer look at some questions raised by data aggregated by age is afforded by the three sets of columns in table IV.3. Measures of proportions single for the 20-24 age group are useful barometers of the timing aspects of first marriages, particularly among females, while those for persons aged 45 to 49—the age beyond which first marriages are infrequent—serve to document the prevalence of lifetime propensities to marry. Measures for the intermediate age interval 25 to 29 provide added documentation of timing decisions among cohorts, particularly for males, but leave the marriage intensity dimension less determinate than do measures applied to the 45 to 49 age interval.

A number of major inter-regional differentials and intra-regional trends are indicated in the age-specific data. In the first place, at all ages and in the case of both sexes, the percentages single are on average substantially and persistently lower in eastern Europe than in any other region, thus corresponding with the aggregate comparisons made in the previous section for the adult population as a whole. Southern Europe, except Yugoslavia, has tended to have the highest proportions single at the younger ages between 20 and 29, but comparatively low proportions at the spinsterhood levels to be found at age 45-49; implied by this contrast, is a relatively high average age at marriage, but at the same time a high propensity to ultimate marriage.[12] Secondly, when national percentages are combined on a regional basis, the proportions single among both males and females are without exception at any age lower in 1970 than 1950. Only southern Europe presents a case—for males 20 to 24—in which a regional average failed to decline during both the 1950s and 1960s. In eastern, northern and western Europe, the 1950-1960 declines for all three age intervals were well above the 1960-1970 declines. However, southern Europe first experienced its main post-war declines in the 1960s at the younger age, lagging behind the rest of the continent by about a decade.

Thirdly, there are, however, noteworthy individual exceptions to the regional trends. About half of the

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[9] Throughout eastern and southern Europe, the declines for both males and females in actual percentages single during the 1950s exceeds the changes in standardized measures. In northern and western Europe during this decade, the comparisons ran about equally in both directions. During the 1960s, the larger changes tended to be in standardized terms in eastern Europe, again in standardized terms in northern Europe, mixed in western Europe and in actual terms among most southern populations. These contrasts over time or space, while bringing out the importance of age factors in interpreting recent trends, should also be considered in the light of their methodological limitations (see foot-note 11 of this chapter).

[10] See J. Hajnal, "The marriage boom", *Population Index* (Princeton, N.J.), vol. 19, No. 2 (April 1953), pp. 80-103; D. S. Bogue, *Principles of Demography* (New York, N.Y., John Wiley and Sons, 1969), chap. 11, especially tables 11.1 and 11.4; Dixon, *loc. cit.*

[11] In effect, changes in age-specific nuptiality in the 1960s had little relation with the changes in the earlier decade and, in addition, were so small as to be dominated by shifts in age structure. Correlations between changes during the two decades give little support to a compensations hypothesis. For females, the changes show a correlation coefficient of about −0.4 using actual percentages single, and of 0.1 for the standardized measures; among males, the corresponding coefficients were −0.3 and + 0.2, respectively. The difference in signs suggests the increasingly important role of age composition, compared with nuptiality changes proper.

[12] However, it should be emphasized that the data of table IV.3 are cross-sectional or period and not cohorts. Thus, the high proportions married at age 45-49 may be the reflection of earlier marriage patterns (with relatively young age at marriage) rather than evidence of the ultimate marriage pattern of those young people listed in the first three columns, aged 20-24 years.

TABLE IV.1

Marital status, by sex, in 26 countries, about 1950, 1960 and 1970

(Percentages among persons aged 15 and over)

Region and country	1950				1960				1970			
	Single	Currently married	Widowed	Divorced	Single	Currently married	Widowed	Divorced	Single	Currently married	Widowed	Divorced
					Males							
Eastern Europe												
Bulgaria	26.2	69.6	3.8	0.4	21.2	74.8	3.4	0.6	20.8	74.9	3.4	0.9
Czechoslovakia	31.3	63.7	4.0	1.0[a]	25.0	69.8	3.5	1.7[a]	26.3	67.8	3.5	2.4[a]
German Democratic Republic	23.0	70.4	5.3	1.3	18.5	75.6	4.2	1.7	21.6	72.3	3.9	2.2
Hungary	30.7	64.5	3.9	0.9	23.6	71.5	3.5	1.4	24.7	69.9	3.2	2.2
Poland	..	64.2	..	..	24.9	71.8	2.5	0.8[a]	31.2	65.3	2.2	1.3[a]
Romania	..	..	..	..	26.7	69.4	3.2	0.7[a]	22.8	73.2	2.9	1.1
Northern Europe												
Denmark	29.2	63.7	4.6	2.5[a]	28.8	64.9	4.2	2.1[a]	28.3	63.7	4.0	4.0[a]
Finland	34.7	60.6	3.6	1.1[a]	33.3	61.8	3.1	1.8[a]	34.1	60.9	2.8	2.2[a]
Ireland	52.9	41.9	5.2	–	48.4	46.9	4.7	–	45.7	50.5	3.8	–
Norway	35.4	59.0	4.4	1.2[a]	31.0	63.5	4.0	1.5[a]	30.7	63.7	3.5	2.1[a]
Sweden	32.8	61.0	4.7	1.5	31.9	61.6	4.2	2.3	32.0	60.9	3.8	3.3
United Kingdom:												
England and Wales	26.5	68.4	4.6	0.5	25.5	70.0	3.9	0.6	25.1	70.1	3.8	1.0
Northern Ireland	42.0	53.0	4.9	0.1	38.2	57.6	4.1	0.1	36.3	59.8	3.8	0.1
Scotland	32.2	62.1	5.4	0.3	28.9	66.1	4.6	0.4	27.6	67.4	4.3	0.7
Western Europe												
Austria	30.3	63.0	4.4	2.3	29.2	64.4	4.0	2.4[a]	27.5	66.0	3.8	2.7
Belgium	29.6	64.1	5.4	0.9[a]	24.2	69.8	5.0	1.0[a]	25.0	69.2	4.6	1.2[a]
France	28.3	65.1	4.8	1.8	29.4	65.1	4.1	1.4	30.7	64.2	3.7	1.4
Germany, Federal Republic of	29.7	64.5	4.5	1.3	26.8	67.8	3.9	1.5	24.0	71.0	3.5	1.5
Netherlands	35.4	59.5	4.1	1.0[a]	30.2	65.3	3.6	0.9[a]	29.4	66.5	3.1	1.0[a]
Switzerland	34.9	59.6	3.9	1.6	33.9	61.3	3.2	1.6	30.8	64.6	2.8	1.8
Southern Europe												
Greece	41.8	54.7	3.1	0.4	35.7	61.1	2.7	0.5	30.3	66.6	2.5	0.6
Italy	37.1	58.6	4.1	0.2[a]	34.3	61.8	3.6	0.3[a]	32.4	63.6	3.4	0.6[a]
Portugal	39.2	56.4	4.0	0.4[a]	34.4	61.8	3.6	0.2[a]	29.4	66.8	3.4	0.4[a]
Spain	42.5	53.1	4.4	–	34.7	61.1	4.0	0.2[a]	32.9	63.4	3.5	0.2[a]
Yugoslavia	31.1	63.9	4.2	0.8	27.2	68.2	3.7	0.9	28.0	67.7	3.2	1.1
USSR	..	..	..	..	..	78.8	..	..	..	72.2	..	..

						Females						
Eastern Europe												
Bulgaria	18.8	69.2	11.4	0.6	14.1	73.8	11.0	1.1	13.6	73.7	11.0	1.7
Czechoslovakia	24.7	59.1	14.8	1.4[a]	18.0	64.3	15.2	2.5[a]	18.6	62.7	15.4	3.3[a]
German Democratic Republic	22.3	56.3	18.7	2.7	16.1	59.9	19.5	4.5	17.3	58.4	19.3	5.0
Hungary	22.7	59.1	16.6	1.6	17.3	64.1	15.8	2.8	17.2	63.8	15.2	3.8
Poland	..	55.3	..	..	21.0	62.6	14.9	1.5[a]	24.7	59.7	13.4	2.2[a]
Romania	..	..	..	..	18.4	64.0	15.6	2.0[a]	14.0	68.8	14.3	2.9
Northern Europe												
Denmark	25.2	61.5	9.7	3.6[a]	23.5	62.7	10.4	3.4[a]	21.5	61.3	11.7	5.5[a]
Finland	31.6	52.7	13.8	1.9[a]	28.9	54.9	13.3	2.9[a]	28.4	55.1	12.9	3.6[a]
Ireland	42.8	44.8	12.4	–	38.9	48.1	13.0	–	36.5	50.9	12.6	–
Norway	31.6	56.8	9.9	1.7[a]	26.0	61.8	10.1	2.1[a]	24.2	61.9	11.2	2.7[a]
Sweden	28.5	59.6	9.8	2.1	26.6	60.3	10.1	3.0	24.9	59.8	11.1	4.2
United Kingdom:												
England and Wales	24.8	61.6	12.9	0.7	21.9	63.6	13.6	0.9	20.0	64.2	14.3	1.5
Northern Ireland	38.1	50.3	11.4	0.2	34.1	53.7	12.0	0.2	31.9	55.7	12.2	0.2
Scotland	31.7	55.6	12.2	0.5	27.0	59.2	13.1	0.7	24.1	60.4	14.4	1.1
Western Europe												
Austria	27.5	52.5	17.0	3.0	24.9	53.5	18.1	3.5[a]	21.9	55.5	18.5	4.1
Belgium	25.0	61.3	12.5	1.2[a]	19.8	65.0	13.9	1.3[a]	19.4	64.5	14.6	1.5[a]
France	22.4	58.3	17.1	2.2	22.5	59.0	16.5	2.0	23.7	58.5	15.6	2.2
Germany, Federal Republic of	27.1	55.7	15.3	1.9	22.7	57.7	17.0	2.6	19.2	59.8	18.0	3.0
Netherlands	32.4	57.8	8.4	1.4[a]	26.4	63.2	8.9	1.5[a]	24.0	64.4	10.1	1.5[a]
Switzerland	33.0	53.4	11.2	2.4	30.3	56.0	11.0	2.7	26.5	59.5	11.0	3.0
Southern Europe												
Greece	31.4	51.8	16.2	0.6	26.1	58.3	14.6	1.0	20.9	63.7	14.1	1.3
Italy	32.1	55.0	12.7	0.2[a]	29.1	58.0	12.5	0.4[a]	26.1	59.8	13.4	0.7[a]
Portugal	35.7	51.6	12.2	0.5[a]	32.4	55.9	11.3	0.4[a]	28.1	59.5	11.7	0.7[a]
Spain	37.6	48.4	14.0	–	31.5	55.9	13.0	0.2[a]	28.4	58.6	12.6	0.4[a]
Yugoslavia	24.2	58.6	15.9	1.3	20.4	63.8	13.9	1.9	20.0	64.7	12.8	2.5
USSR	..	..	..	..	..	56.0	..	..	..	58.0	..	..

Sources: United Nations, *Demographic Yearbook*, various years; official communications.

[a] Including separations.

TABLE IV.2

Age-standardized distributions of marital status, by sex, in 25 countries, about 1950, 1960 and 1970

(*Percentages among persons aged 15 and over, age-standardized data*)[a]

Region and country	*1950*				*1960*				*1970*			
	Single	*Currently married*	*Widowed*	*Divorced*	*Single*	*Currently married*	*Widowed*	*Divorced*	*Single*	*Currently married*	*Widowed*	*Divorced*
						Males						
Eastern Europe												
Bulgaria	26.2	69.6	3.8	0.4	25.9	70.5	3.0	0.6	26.3	70.2	2.6	0.9
Czechoslovakia	31.3	63.7	4.0	1.0[b]	27.1	68.2	3.0	1.7[b]	25.9	68.8	2.8	2.5[b]
German Democratic Republic	23.0	70.4	5.3	1.3	19.4	75.6	3.4	1.6	20.3	73.7	3.3	2.7
Hungary	30.7	64.5	3.9	0.9	26.4	69.3	3.0	1.3	26.0	69.2	2.6	2.2
Poland	..	64.2	..	..	30.0	67.0	2.2	0.8[b]	30.5	66.7	1.7	1.1[b]
Romania	..	..	..	..	26.4	70.1	2.4	1.1	..	..	..	..
Northern Europe												
Denmark	29.2	63.7	4.6	2.5[b]	27.7	65.5	3.8	3.0[b]	26.8	65.5	3.4	4.3[b]
Finland	34.7	60.6	3.6	1.1[a]	33.9	61.6	2.8	1.7[a]	33.0	62.6	2.2	2.2[a]
Ireland	52.9	41.9	5.2	–	51.0	44.8	4.2	–	45.1	51.4	3.5	–
Norway	35.4	59.0	4.4	1.2[b]	31.6	63.4	3.5	1.5[b]	28.5	66.5	2.8	2.2[b]
Sweden	32.8	61.0	4.7	1.5	31.0	63.0	3.7	2.3	30.3	63.2	3.1	3.4
United Kingdom:												
England and Wales	26.5	68.4	4.6	0.5	25.0	70.7	3.7	0.6	23.5	72.0	3.4	1.1
Northern Ireland	42.0	53.0	4.9	0.1	38.4	57.6	3.9	0.1	35.6	60.7	3.6	0.1
Scotland	32.2	62.1	5.4	0.3	29.0	66.3	4.3	0.4	25.6	69.7	3.9	0.8
Western Europe												
Austria	30.3	63.0	4.4	2.3	27.6	66.3	3.6	2.5[b]	26.4	67.8	2.9	2.9
Belgium	29.6	64.1	5.4	0.9[b]	26.3	68.5	4.2	1.0[b]	24.8	70.2	3.9	1.1[b]
France	28.3	65.1	4.8	1.8	28.7	66.7	2.7	1.9	27.6	66.6	3.7	2.1
Germany, Federal Republic of	29.7	64.5	4.5	1.3	26.2	68.7	3.5	1.6	26.9	68.9	2.8	1.4
Netherlands	35.4	59.5	4.1	1.0[a]	32.2	64.0	2.9	0.9[b]	29.1	67.8	2.2	0.9[b]
Switzerland	34.9	59.6	3.9	1.6	32.3	62.9	3.1	1.7	28.8	66.8	2.6	1.8
Southern Europe												
Greece	41.8	54.7	3.1	0.4	40.4	56.8	2.3	0.5	38.4	58.0	2.7	0.9
Italy	37.1	58.6	4.1	0.2[b]	36.8	59.7	3.3	0.2[b]	36.1	60.7	2.6	0.6[b]
Portugal	39.2	56.4	4.0	0.4[b]	37.8	58.7	3.2	0.3[b]	34.4	62.7	2.5	0.4[b]
Spain	42.5	53.1	4.4	–	39.3	57.1	3.5	0.1[b]	37.9	59.2	2.7	0.2[b]
Yugoslavia	31.1	63.9	4.2	0.8	32.7	63.2	3.3	0.8	32.1	64.1	2.7	1.1

						Females						
Eastern Europe												
Bulgaria	18.8	69.2	11.4	0.6	17.3	72.2	9.4	1.1	16.8	73.2	8.2	1.8
Czechoslovakia	24.7	59.1	14.8	1.4[b]	19.1	66.0	12.5	2.4[b]	18.3	66.8	11.5	3.4[b]
German Democratic Republic	22.3	56.3	18.7	2.7	18.0	61.9	15.3	4.8	17.2	63.3	14.3	5.2
Hungary	22.7	59.1	16.6	1.6	18.6	65.4	13.5	2.5	17.9	66.9	11.4	3.8
Poland	..	55.3	..	..	24.8	61.2	12.6	1.4[b]	24.6	62.9	10.1	2.4[b]
Romania	..	..	..	..	15.9	68.8	12.4	2.9	..	..	..	..
Northern Europe												
Denmark	25.2	61.5	9.7	3.6[b]	22.2	64.3	9.1	4.4[b]	20.2	65.2	9.0	5.6[b]
Finland	31.6	52.7	13.8	1.9[b]	28.9	56.5	11.8	2.8[b]	26.7	59.2	10.3	3.8[b]
Ireland	42.8	44.8	12.4	–	41.0	47.7	11.3	–	35.8	53.3	10.9	–
Norway	31.6	56.8	9.9	1.7[b]	24.9	64.2	8.9	2.0[b]	21.4	67.0	8.8	2.8[b]
Sweden	28.5	59.6	9.8	2.1	24.7	63.4	8.9	3.0	23.1	63.8	8.7	4.4
United Kingdom:												
England and Wales	24.8	61.6	12.9	0.7	21.3	65.8	12.0	0.9	18.6	68.2	11.6	1.6
Northern Ireland	38.1	50.3	11.4	0.2	33.8	55.0	11.0	0.2	31.0	58.0	10.8	0.2
Scotland	31.7	55.6	12.2	0.5	27.1	60.6	11.7	0.6	23.3	64.1	11.4	1.2
Western Europe												
Austria	27.5	52.5	17.0	3.0	24.3	56.2	15.9	3.6[b]	21.9	59.2	14.6	4.3
Belgium	25.0	61.3	12.5	1.2[b]	21.4	65.6	11.7	1.3[b]	19.4	67.4	11.8	1.4[b]
France	22.4	58.3	17.1	2.2	21.3	60.9	15.3	2.5	20.4	62.4	14.4	2.8
Germany, Federal Republic of	27.1	55.7	15.3	1.9	23.2	59.4	14.8	2.6	20.3	64.1	12.6	3.0
Netherlands	32.4	57.8	8.4	1.4[b]	27.6	63.4	7.6	1.4[b]	23.4	67.2	7.8	1.6[b]
Switzerland	33.0	53.4	11.2	2.4	29.6	57.7	10.0	2.7	25.4	62.2	9.3	3.1
Southern Europe												
Greece	31.4	51.8	16.2	0.6	30.8	55.6	12.6	1.0	27.2	61.7	9.9	1.2
Italy	32.1	55.0	12.7	0.2[b]	31.1	57.3	11.3	0.3[b]	28.6	60.6	10.1	0.7[b]
Portugal	35.7	51.6	12.2	0.5[b]	34.2	55.1	10.2	0.5[b]	30.7	59.3	9.4	0.6[b]
Spain	37.6	48.4	14.0	–	34.8	53.5	11.4	0.3[b]	31.8	58.1	9.7	0.4[b]
Yugoslavia	24.2	58.6	15.9	1.3	23.9	61.5	12.9	1.7	22.0	64.5	11.1	2.4

Sources: See table IV.1.

[a] Standardized according to the five-year age distributions of the population of each country in 1950.

[b] Including separations.

TABLE IV.3

Proportions single, three age intervals, by sex, in 25 countries, about 1950, 1960 and 1970

(*Percentages*)

	20-24			*25-29*			*45-49*		
	1950	*1960*	*1970*	*1950*	*1960*	*1970*	*1950*	*1960*	*1970*
					Males				
Eastern Europe									
Bulgaria	57.9	61.2	63.1	22.0	19.2	19.6	2.7	1.9	1.7
Czechoslovakia	85.0	74.1	66.8	45.8	25.8	21.7	5.8	5.4	5.6
German Democratic Republic	71.0	59.9	66.6	31.3	17.9	19.9	4.4	2.2	2.1
Hungary	75.7	70.9	67.8	40.8	22.9	23.3	6.7	5.5	4.3
Poland	..	72.2	75.4	..	28.7	27.5	..	4.1	3.8
Romania	..	71.3	67.9	..	21.7	21.1	..	..	2.7
Northern Europe									
Denmark	81.0	77.2	73.3	38.2	32.4	29.3	9.7	9.7	9.4
Finland	78.6	75.0	71.6	38.8	36.9	31.7	11.9	10.0	12.2
Ireland	94.9	92.5	89.6	76.6	67.2	58.5	32.0	30.5	29.9
Norway	88.0	78.9	71.8	54.7	40.7	31.4	15.5	13.4	12.9
Sweden	84.5	82.4	84.2	48.6	41.3	41.8	16.2	14.5	14.0
United Kingdom:									
England and Wales	76.2	69.0	60.1	34.9	29.4	24.4	9.8	9.5	9.8
Scotland	80.0	70.4	61.6	41.8	30.8	25.1	13.5	12.4	11.7
Northern Ireland	87.0	79.0	74.6	55.6	44.8	35.7	20.5	18.6	17.8
Western Europe									
Austria	83.9	81.8	74.3	47.9	38.8	37.1	10.0	8.0	6.7
Belgium	78.1	70.7	64.6	38.7	26.6	21.9	9.1	9.0	8.3
France	76.6	77.8	70.6	33.6	34.9	30.5	10.7	10.0	9.9
Germany, Federal Republic of	83.3	79.4	79.4	46.7	35.8	36.3	6.8	4.9	4.4
Netherlands	86.3	83.3	71.6	47.0	36.9	25.4	9.1	7.7	7.0
Switzerland	90.3	86.1	80.4	53.8	46.2	36.0	13.4	11.9	9.2
Southern Europe									
Greece	88.6	89.1	86.9	63.5	57.4	52.6	7.3	6.9[a]	6.2[a]
Italy	90.7	90.9	86.6	55.5	55.2	45.7	9.3	9.3	11.1
Portugal	83.9	80.9	80.7	43.8	39.4	30.8	12.2	11.5	8.2
Spain	94.2	93.0	90.5	59.5	53.5	46.0	9.6	7.1	8.8
Yugoslavia	64.0	70.6	67.7	23.1	25.7	25.2	4.7	4.9	3.7
					Females				
Eastern Europe									
Bulgaria	33.2	27.4	25.4	11.2	9.6	7.3	2.2	2.2	2.2
Czechoslovakia	54.1	32.8	35.2	22.8	10.0	10.2	9.5	6.2	5.2
German Democratic Republic	60.4	33.3	34.6	29.4	12.6	9.4	9.1	7.9	10.6
Hungary	46.6	31.4	32.3	21.9	11.2	10.4	8.5	7.3	5.5
Poland	..	41.1	46.5	..	15.7	14.1	..	9.2	7.7
Romania	..	33.6	24.1	..	13.4	7.9	..	..	4.3
Northern Europe									
Denmark	50.1	45.9	45.5	19.5	14.6	13.8	13.9	9.4	6.7
Finland	59.0	54.0	52.0	29.0	24.1	21.8	18.7	14.2	12.1
Ireland	82.3	78.2	74.8	54.4	45.1	37.8	26.3	22.1	20.4
Norway	65.6	49.7	46.2	33.3	17.9	16.4	20.5	13.0	8.4
Sweden	59.7	57.5	61.6	26.4	20.7	23.6	18.5	11.0	7.8
United Kingdom:									
England and Wales	51.8	42.0	39.7	21.7	15.7	13.3	15.2	10.5	7.8
Scotland	60.2	48.2	42.0	29.0	19.0	14.6	20.3	14.2	11.4
Northern Ireland	70.8	61.3	56.6	40.4	30.5	24.0	23.8	18.7	16.2

TABLE IV.3 (*continued*)

Proportions single, three age intervals, by sex, in 25 countries, about 1950, 1960 and 1970

(*Percentages*)

	20-24			*25-29*			*45-49*		
	1950	*1960*	*1970*	*1950*	*1960*	*1970*	*1950*	*1960*	*1970*
Western Europe									
Austria	66.2	58.0	44.2	35.6	24.2	22.9	14.3	12.1	11.4
Belgium	56.3	43.5	40.2	24.5	14.5	11.6	10.3	9.2	7.7
France	50.8	47.3	45.9	20.4	18.5	16.5	10.2	8.6	8.2
Germany, Federal Republic of	67.4	54.8	48.6	34.3	20.9	15.0	12.7	9.4	9.8
Netherlands	69.2	59.4	46.4	32.5	20.5	13.9	13.5	11.0	8.2
Switzerland	73.9	65.3	54.4	37.6	28.4	21.6	19.2	15.3	12.0
Southern Europe									
Greece	69.7	65.3	52.5	37.4	34.7	25.6	5.1	6.2[a]	7.1[a]
Italy	67.8	65.6	56.5	34.6	31.1	23.2	15.0	13.7	13.8
Portugal	65.3	62.1	60.7	35.5	32.0	25.0	17.2	15.9	12.5
Spain	79.3	73.4	68.3	42.6	34.9	26.6	15.2	14.6	12.1
Yugoslavia	41.4	42.0	36.6	18.0	16.3	12.6	5.8	6.1	6.3

Sources: See table IV.1.

[a] Ages 45-54.

national populations of each sex in eastern Europe showed rising proportions single at the ages 20 to 24 between 1960 and 1970, as did half the male populations aged 25-29, but in almost all cases, where data were available, the 1970 proportion single was well below that of 1950. The shift upwards between 1960 and 1970 could mean that some countries of the region may be in the process of departing to some extent from their traditional pattern of low average age at first marriage, but it cannot be concluded that the proportion not marrying at all will remain high. The figures of the last three columns of table IV.3 for ages 45-49 years at least indicate a tradition of high proportions ultimately marrying. In northern Europe, Sweden in the youngest ages and Finland in the upper age group both experienced upward movements in the proportions single even though the regional average fell during the 1960s.

Fourthly, male-female comparisons reflect partly conventional, partly special causal factors, depending on age. Between the ages of 20 and 29 the proportion single among females is everywhere far below—as a rule between about one-half and three-quarters—the proportion among males. Here younger ages of marriage for females would appear to be the dominant factor, especially so in eastern Europe and least so in Ireland. At 45 to 49, however, where the effect of sex differentials in age of marriage should have largely disappeared, the comparisons are generally reversed. Here, proportions single are far more likely to be higher in the case of females than in the case of males in eastern, western and northern Europe. This reflects not only the influence of customary first marriage and re-marriage patterns but also the impact of wars (and perhaps migration in some areas) on sex ratios in the main ages of marriage during previous decades. Given that the cohorts aged 45 to 49 in 1970 were in the main marrying ages during and after the Second World War, and given also variable wartime effects by regions, it appears significant that only northern Europe provides instances in 1960, and especially in 1970, of lower female proportions single about age 50. Such an outcome could stem from the lesser effect of war losses on sex ratios in this region compared with other parts of Europe. Additional main causal factors may be involved, however, which cannot be detected from the available series, such as a high propensity to remarry.

An interesting further comparison permitted by table IV.3 is that between male and female proportions single at the same age or between such proportions for the same sex at different ages. Although references to these patterns, especially the latter, are numerous in the literature, little attention has yet been paid to significant parts of the evidence. Thus, the correlations between male and female proportions have been high at each of the three documented periods, ranging between about 0.8 and 0.9 for each of the age intervals in table IV.3. However, the correlation between female proportions in the 20-24 or 25-29 age groups and those in the 45-49 group have been considerably lower, between about 0.65 and 0.8, thereby perhaps calling into question the frequent proposition that early timing of marriage is closely associated with low lifetime percentages remaining single. Moreover, the corresponding correlations for males are lower still, about 0.65 when the 25-29 measures are used as timing indicators and between 0.4 to 0.6 using the 20-24 values.

With respect to trends (as opposed to levels) the correlations between male and female proportions have been in a clearly downward direction in both the 20-24 and 45-49 age groups, with no consistent pattern for the 25-29 group. As to trends in the associations between ages, those for females have increased steadily between 1950 and 1970, whether the values for the 45-49 age group are correlated with those of the 20-24 group or the 25-29 group; but those for males have decreased steadily. In short, both the nature and stability of marriage propensities are more complex phenomena than is commonly recognized.

3. *Some cohort indications*

Estimates of patterns among cohorts bring out much the same conclusions as do period measures, though with some occasional variations. Table IV.4 presents cumulative ever-married rates for five-year cohorts born between 1921-1925 and 1946-1950 in 17 countries. Since the end year for the estimates is 1970, the last significant birth cohort which can be documented is that born in the period 1946-1950 and for the oldest age group, i.e. aged 30 to 34 (by which time at least three-quarters of male first marriages and nine-tenths of female first marriages take place), the last birth cohort included is for the period 1936-1940. It will be seen that cohorts born between 1920 and 1940, hence reaching the main ages of marriage between about 1940 and 1965, have generally had lower proportions single in eastern Europe than in other regions, given evidence of a widespread tendency to falling proportions single by age 35 among females, and again show typically downward if less uniform trends among males.

Among the more recent cohorts born between 1935 and 1940 or 1950, the essential trend seems to be towards stability: where there is a continuing decline in the proportions single the movement is slight, and amongst those aged 25 years and over there are a few cases of an upward trend. Countries which show signs of levelling off at these ages are Bulgaria, Hungary, Denmark and France in the case of female cohorts aged 25-29 years, and Norway and Austria for females aged 30-34 years. For males at these ages, the picture seems to be essentially one of approaching stability rather than of continuing decline. It should be borne in mind, however, that these cohort data do not take fully into account the most recent trends.

4. *Currently married population*

Since the bulk of the non-single population is currently married, the main patterns holding for this status are largely mirror images of those for single populations. Thus, as shown in tables IV.1 and IV.5, the proportions of currently married among both males and females over age 15 rose practically everywhere during the 1950s and did so by amounts clearly correlated with the concomitant declines in the proportions single. Similarities between the two sets of proportions also held during the 1960s, the directions as well as the degrees of change varying in this case. Thus too, the proportions currently married among females aged 20 to 29, which have been consistently much higher in eastern Europe than elsewhere, rose everywhere on the continent between 1950 and 1960, as a rule by substantial margins. The upward movement was less marked in the 1960s, and showed a slight downward trend in one or other sex in three east European countries, a slight downward movement for males in Denmark and for both sexes in Sweden. But generally the proportions currently married in 1970 remained much above 1950 levels.

Two sets of details of special interest should be further noted from table IV.5. One is the marked tendency for the proportions currently married in the ages 45 to 49 to be lower than the proportions in the ages 25 to 29 in a number of female populations in eastern Europe and in the USSR, which is in direct contrast to the comparative patterns at the same ages found everywhere in these countries for males. Further major contrasts to be seen are the phenomenally low proportions of females currently married in the USSR aged 45 to 49 in 1960, whether compared with the males of that country or any other female population on the continent. Analogous though less striking contrasts are again encountered in 1970, when the proportion currently married among males aged 45 to 49 in the USSR was the second highest in Europe, while the corresponding measure for females was by far the lowest. Mortality factors of two kinds, those related to the Second World War and the rising differentials in favour of females, are major explanations of these patterns (although not the only ones, since re-marriage differences between countries and sexes are also involved).

These general and specific comparisons over time and space are relevant to the interpretation of fertility trends and differentials. Changes in the number, prevalence and age structure of the currently married population can be directly linked to both numbers of births and rates of reproduction.

Contributing also to the above patterns of the currently married have been the tendencies encountered among the widowed and divorced. Essentially, since both of these latter marital categories represent only limited proportions of the total marriage-age population, and in addition have moved in opposite directions during recent decades, their net combined influence has been secondary compared with that of the much larger proportions of currently married or single. It is only when considered individually and in their own right that the trends among the widowed and divorced become major social phenomena, as is discussed below.

5. *Widowed population*

International differences in the gross volume of widowhood, as well as variations in its shifts over time, can be greatly affected by differential rates of re-marriage. For a clear view of the role of widowhood, as a factor of marital dissolution, one has therefore to look at flow data directly, as is done below. However, analysis of some cross-sectional and temporal patterns revealed by censuses emphasize a number of salient features.

By far the most obvious of these are the marked differences, in all regions and over the whole period under discussion, between the male and female proportions. None of the male measures shown in table IV.1 for 1950 1960 and 1970 is much over 5 per cent, and no female value is much under 10 per cent. Most recently, as of about 1970, the indicated range of measures for males has been within 2 to 5 per cent, and the range for females

TABLE IV.4

Proportions single, by age and sex, for the birth cohorts of 1921-1925 to 1946-1950, for 17 countries

(*Percentages*)

Region, country and age group	Males 1921-1925	Males 1926-1930	Males 1931-1935	Males 1936-1940	Males 1941-1945	Males 1946-1950	Females 1921-1925	Females 1926-1930	Females 1931-1935	Females 1936-1940	Females 1941-1945	Females 1946-1950
Eastern Europe												
Bulgaria												
20-24	58	59	61	62	63	..	33	31	28	26	26	..
25-29	20	19	19	20	..	..	11	10	9	8	..	..
30-34	6	6	7	..	..	..	5	5	4	..	..	..
Czechoslovakia												
20-24	86	82	78	74	71	67	58	45	37	33	33	35
25-29	35	28	26	23	22	..	17	12	10	10	10	..
30-34	13	12	12	11	..	..	9	7	6	5	..	..
German Democratic Republic												
20-24	85	71	62	59	60	66	69	60	47	37	33	34
25-29	31	22	18	18	20	..	29	25	18	12	9	..
30-34	10	7	6	9	..	..	14	12	9	7	..	..
Hungary												
20-24	79	74	71	71	71	68	52	42	34	31	32	32
25-29	35	26	23	22	23	..	20	14	11	11	12	..
30-34	13	10	10	11	..	..	10	8	6	6	..	..
Poland												
20-24	..	76	73	72	73	76	..	47	43	41	43	47
25-29	..	30	29	28	28	..	..	20	16	14	14	..
30-34	..	11	12	13	..	..	..	11	8	7	..	..
orthern Europe												
Denmark												
20-24	85	81	79	77	73	73	59	50	47	46	45	45
25-29	38	35	32	29	29	..	19	17	15	13	14	..
30-34	17	17	15	15	..	..	11	9	8	7	..	..
Finland												
20-24	79	79	77	75	73	72	61	59	57	54	54	52
25-29	39	39	37	35	32	..	29	27	24	23	22	..
30-34	21	22	21	20	..	..	18	17	15	14	..	..
Norway												
20-24	91	88	84	79	75	72	75	66	57	50	47	46
25-29	55	49	41	35	31	..	33	25	18	16	16	..
30-34	28	24	20	17	..	..	15	12	9	8	..	..
Sweden												
20-24	87	85	82	82	81	84	64	60	57	57	57	62
25-29	49	45	41	38	42	..	26	23	21	20	24	..
30-34	26	24	21	21	..	..	14	12	11	12	..	..

TABLE IV.4 (*continued*)

Proportions single, by age and sex, for the birth cohorts of 1921-1925 to 1946-1950, for 17 countries

(*Percentages*)

Region, country and age group	*Males*						*Females*					
	1921-1925	*1926-1930*	*1931-1935*	*1936-1940*	*1941-1945*	*1946-1950*	*1921-1925*	*1926-1930*	*1931-1935*	*1936-1940*	*1941-1945*	*1946-1950*
Western Europe												
Austria												
20-24	87	84	82	82	81	74	73	66	61	58	54	44
25-29	46	42	39	37	37	..	36	32	29	28	28	..
30-34	21	18	19	21	..	..	18	16	15	15	..	..
Belgium												
20-24	79	77	74	71	68	65	59	53	48	44	42	40
25-29	36	32	27	24	22	..	22	18	15	13	12	..
30-34	18	15	14	12	..	..	12	10	8	7	..	..
France												
20-24	80	74	77	78	71	68	59	49	50	48	44	45
25-29	33	32	34	34	29	..	21	20	19	17	17	..
30-34	18	18	21	19	..	..	13	12	11	10	..	..
Germany, Federal Republic of												
20-24	88	83	80	79	81	79	74	67	61	56	52	49
25-29	46	40	36	37	36	..	34	28	22	18	15	..
30-34	17	14	15	16	..	..	16	14	11-	9	..	..
Netherlands												
20-24	89	89	88	86	80	72	74	71	68	63	56	47
25-29	49	44	39	32	25	..	32	27	22	17	14	..
30-34	17	16	15	14	..	..	14	12	10	8	..	..
Switzerland												
20-24	91	90	88	86	83	80	77	74	70	65	60	55
25-29	54	50	46	42	36	..	38	36	34	30	27	..
30-34	26	23	20	16	..	..	20	18	15	13	..	..
Southern Europe												
Greece												
20-24	89	89	89	89	88	87	71	70	68	66	61	53
25-29	64	60	58	55	53	..	38	36	35	31	26	..
30-34	32	29	27	25	..	..	19	18	17	14	..	..
Yugoslavia												
20-24	66	61	66	70	70	68	45	42	42	42	40	37
25-29	25	23	26	27	26	..	18	18	17	15	13	..
30-34	10	10	11	11	..	..	10	10	10	9	..	..

Sources: ECE secretariat estimates based on national censuses and annual vital statistics reports.

TABLE IV.5

Proportions currently married, three age intervals, by sex, in 26 countries, about 1950, 1960 and 1970

(*Percentages*)

Region and country	*20-24*			*25-29*			*45-49*		
	1950	*1960*	*1970*	*1950*	*1960*	*1970*	*1950*	*1960*	*1970*
					Males				
Eastern Europe									
Bulgaria	41.6	38.2	36.3	77.0	79.9	79.2	93.8	95.9	96.3
Czechoslovakia	14.8	25.6	32.6	53.2	72.9	76.2	90.5	90.7	89.5
German Democratic Republic	28.6	39.1	32.5	67.2	79.9	76.8	91.5	95.3	94.8
Hungary	24.1	28.8	31.5	58.3	75.9	74.4	89.3	91.4	91.7
Poland	25.1	27.6	24.1	65.5	70.6	71.2	91.5	93.9	93.2
Romania	..	28.3	31.5	..	77.3	77.4	..	94.9[a]	94.8
Northern Europe									
Denmark	18.4	22.2	25.7	59.4	65.2	66.8	85.3	84.5	83.5
Finland	21.1	24.5	27.9	60.0	61.9	66.5	84.1	85.5	83.0
Ireland	5.1	7.5	15.4	23.2	32.8	50.7	65.5	67.8	73.3
Norway	11.7	20.7	27.7	44.4	58.2	66.6	81.1	83.3	83.2
Sweden	15.4	17.4	15.5	50.4	57.6	56.3	80.3	80.8	79.8
United Kingdom:									
England and Wales	23.7	30.9	36.6	64.6	70.2	73.2	87.8	88.2	87.3
Northern Ireland	12.9	21.0	25.4	44.9	55.1	64.2	77.0	79.7	80.6
Scotland	19.9	29.5	38.1	57.7	68.9	74.1	83.7	85.2	85.7
Western Europe									
Austria	15.8	17.9	24.9	50.5	59.6	59.8	84.8	86.5	88.7
Belgium	21.8	29.2	35.3	60.5	72.9	77.3	86.7	87.7	88.5
France	23.4	22.1	29.2	65.6	64.5	68.6	83.6	84.5	85.4
Germany, Federal Republic of	16.5	20.4	20.4	52.3	63.1	62.6	89.4	91.4	92.9
Netherlands	13.5	16.6	28.2	52.0	62.6	73.9	87.7	90.0	90.8
Switzerland	9.6	13.8	19.4	45.4	53.0	62.9	82.9	84.7	87.4
Southern Europe									
Greece	11.3	10.7	12.8	36.1	42.2	47.1	89.8	90.9[b]	92.2[b]
Italy	9.3	9.0	13.2	44.2	44.7	54.0	88.4	89.0	86.9
Portugal	16.0	19.0	19.3	55.7	60.2	68.9	83.8	85.8	89.8
Spain	5.7	6.9	9.5	40.2	46.3	53.8	87.2	91.1	89.6
Yugoslavia	35.4	29.0	31.8	75.5	73.2	73.5	90.6	91.8	93.1
USSR	..	27.4	28.9	..	80.0	77.2	.	96.3	95.2
					Females				
Eastern Europe									
Bulgaria	65.3	71.1	72.7	85.9	88.2	90.0	87.7	89.5	89.6
Czechoslovakia	44.4	66.1	62.9	73.5	87.1	85.4	76.7	81.6	82.5
German Democratic Republic	38.3	64.6	63.0	63.3	83.6	85.2	74.2	71.8	75.4
Hungary	51.9	67.1	65.4	72.5	85.6	85.2	76.1	77.4	81.7
Poland	46.2	58.0	52.5	71.4	82.3	83.1	70.3	75.7	81.5
Romania	..	64.0	73.0	..	82.8	88.1	..	79.9[a]	80.4
Northern Europe									
Denmark	48.1	52.2	51.9	76.5	81.4	80.4	76.3	79.6	81.6
Finland	40.3	45.0	46.6	68.5	73.4	74.8	67.4	71.8	75.6
Ireland	17.6	21.8	31.0	45.2	54.7	68.6	66.2	71.6	76.1
Norway	33.8	49.3	52.4	65.1	80.3	80.6	71.7	79.9	84.1
Sweden	39.8	41.9	37.6	71.7	77.1	73.0	74.1	80.6	82.0
United Kingdom:									
England and Wales	48.0	57.7	59.7	77.0	83.5	84.7	78.0	82.8	85.6
Northern Ireland	29.1	38.6	43.4	58.9	69.1	75.6	69.1	74.8	77.5
Scotland	39.6	51.6	57.4	69.8	80.3	83.7	72.0	78.3	81.3

TABLE IV.5 (*continued*)

Proportions currently married, three age intervals, by sex, in 26 countries, about 1950, 1960 and 1970

(*Percentages*)

	20-24			*25-29*			*45-49*		
Region and country	*1950*	*1960*	*1970*	*1950*	*1960*	*1970*	*1950*	*1960*	*1970*
Western Europe									
Austria	32.8	40.8	53.6	59.7	72.8	72.6	70.1	68.3	75.2
Belgium	43.3	56.1	59.4	73.5	84.3	86.7	80.5	82.8	84.8
France	48.8	52.3	53.5	77.9	80.0	81.7	77.8	79.4	81.3
Germany, Federal Republic of	31.7	44.4	50.2	61.0	77.0	82.0	74.0	70.2	79.8
Netherlands	30.1	40.2	53.0	65.3	78.6	84.7	78.7	82.2	85.5
Switzerland	25.8	34.2	45.0	60.8	69.9	76.2	71.9	76.2	79.2
Southern Europe									
Greece	29.4	34.2	46.7	59.5	63.9	73.0	77.3	78.7[b]	81.4[b]
Italy	32.0	34.2	43.0	64.4	68.3	73.9	75.9	77.3	78.6
Portugal	34.3	37.6	39.0	63.3	67.2	74.1	71.5	78.0	80.7
Spain	20.5	26.4	31.4	56.5	64.8	72.7	71.3	76.3	81.6
Yugoslavia	57.0	56.6	61.7	77.7	80.6	84.2	75.1	76.1	79.9
USSR	..	50.1	55.9	..	75.9	82.7	..	54.9	71.9

Sources: See table IV.1.

[a] Ages 40-49.

[b] Ages 45-54.

between 10 and nearly 20 per cent.[13] Since the percentages have generally been falling, it follows that at least one-tenth of Europe's female population aged 15 and over has been widowed at any given time during the past quarter-century.

The largest national contrasts between sexes in recent years have been in eastern and southern Europe, where four-to-one ratios of female to male measures have not been uncommon. Smaller average but often highly variable ratios are encountered in the northern and western regions, the smallest being typical of some Scandinavian areas and the largest of German-speaking countries.

With practically no exception when age factors are held constant, the proportions widowed among both sexes have been declining steadily in the post-war era. As can be seen from table IV.2, only Norway (each sex between 1950 and 1960), Belgium (females, 1960-1970), France (males, 1960-1970), Netherlands (females, 1960-1970), and Greece (males, 1960-1970) provide counter-examples, a total of six exceptions among the 92 indicated comparisons. Although part of the 1950-1960 declines might be related to the effects of the Second World War, which should have tended to increase the initial or 1950 levels abnormally, the somewhat smaller changes of the 1960-1970 decade are clearly an outcome of peacetime causes.

The variable interplay of mortality and re-marriage in determining a population's proportions widowed can be seen in table IV.6 from the sex differentials at each of the two indicated age intervals, from the age differentials for each sex, and still again from a number of sex-age trends over time. Lower mortality among females and higher re-marriage propensities among males reinforce each other in explaining the very much higher female percentages widowed in both the 45-49 and 65-69 age intervals, while the much higher mortality and lowered marriage opportunities for both sexes at the latter ages combine to explain the sharp upward gradient in the proportions for males and females alike.

With respect to trends within sex-age groups, the sustained tendencies towards declining prevalence of male widowhood in all parts of Europe during both decades, along with the declines among most female populations, must be largely related with generally declining female mortality. Conversely, the main exceptions among female populations in the 65 to 69 year interval in western Europe might well be connected to the stagnation of male upper-age mortality trends in that region. A special national instance, the 1950-1960 rise in this proportion among females aged 45 to 49 in the Federal Republic of Germany as a result of the war, brings out in dramatic fashion the possible impacts of mortality movements.

6. *Divorced population*

Although the probability of being divorced as of any given date has remained relatively small throughout Europe during the post-war period—no aggregate measure in tables IV.1 and IV.2 is as high as 6 per cent and no duration-specific value implied by table IV.7 (difference between successive measures) exceeds 8 per cent—the trends show remarkable uniformity in direction. No country has shown a declining proportion divorced between 1960 and 1970 for the aggregate population aged 15 and over of either sex, and only Denmark, France, the Netherlands and Portugal had indicated

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[13] About the same differences are indicated by the male standardized measures of table IV.2, while those for females are only slightly lower.

TABLE IV.6

Proportion widowed, two age intervals, by sex, in 25 countries, about 1950, 1960 and 1970

(*Percentages*)

Region and country	45-49						65-69					
	Males			Females			Males			Females		
	1950	1960	1970	1950	1960	1970	1950	1960	1970	1950	1960	1970
Eastern Europe												
Bulgaria	2.8	1.4	0.9	9.3	7.1	5.9	. .	14.0	12.7	. .	41.9	36.2
Czechoslovakia	2.1	1.2	1.2	11.5	8.5	7.3	15.0	12.1	11.3	49.6	45.1	43.0
German Democratic Republic	1.9	0.6	0.7	12.8	12.9	6.9	14.1	8.6	8.3	46.0	39.7	41.3
Hungary	2.5	1.1	0.8	12.9	11.6	7.4	14.4	11.3	9.7	56.3	46.9	42.1
Poland	. .	1.0	0.9	. .	12.8	7.3	. .	. .	8.7	. .	. .	45.0
Romania	. .	. .	0.9	. .	. .	11.2	. .	. .	12.2	. .	. .	46.3
Northern Europe												
Denmark	1.5	1.2	1.2	5.0	4.4	4.2	14.6	11.2	9.7	31.1	29.8	30.5
Finland	2.2	1.4	1.2	11.0	9.3	6.9	16.2	12.6	10.4	47.7	42.3	38.4
Ireland	2.5	1.7	1.4	7.5	6.3	5.1	14.4	12.3	10.9	35.4	35.0	34.9
Norway	1.5	1.0	0.9	5.3	4.1	3.9	13.7	10.3	7.7	28.8	26.5	26.6
Sweden	1.5	1.1	0.9	4.6	3.7	3.5	14.4	10.7	8.1	29.3	27.2	26.2
United Kingdom:												
England and Wales	1.7	1.2	1.2	5.8	5.0	4.3	14.3	11.1	9.7	36.7	34.9	32.9
Northern Ireland	2.3	1.6	1.4	6.8	6.0	5.7	15.0	11.9	11.5	34.7	34.9	34.4
Scotland	2.4	1.7	1.5	7.0	6.3	5.4	17.7	14.3	12.1	36.3	36.4	35.7
Western Europe												
Austria	1.8	1.2	1.0	11.3	14.2	7.5	12.6	10.6	9.3	43.3	41.4	41.2
Belgium	2.7	1.2	1.3	7.5	5.8	5.2	16.8	12.9	11.7	34.8	35.3	35.8
France	2.4	1.6	1.4	8.4	7.0	5.8	14.2	12.2	11.2	45.4	39.3	37.2
Germany, Federal Republic of	1.7	1.0	0.8	10.5	16.1	6.3	13.8	10.7	7.9	42.6	40.4	40.4
Netherlands	1.8	0.8	0.7	5.9	4.3	4.0	16.8	10.5	7.8	30.4	28.2	28.8
Switzerland	1.2	0.9	0.7	5.4	4.7	4.4	13.3	10.1	7.7	36.0	31.9	28.9
Southern Europe												
Greece	2.2	1.4[a]	0.7[a]	16.8	13.7[a]	9.4[a]	12.8	11.3[a]	9.3[a]	56.2	54.2[a]	45.6[a]
Italy	1.9	1.1	1.0	9.2	8.3	6.4	14.7	11.8	9.6	41.6	37.9	34.9
Portugal	3.3	2.1	1.3	10.3	7.1	5.9	16.3	13.5	10.4	41.8	36.7	33.0
Spain	3.2	1.7	1.2	13.5	8.7	5.7	18.6	15.0	11.4	47.6	42.0	37.5
Yugoslavia	3.6	2.0	1.2	17.5	15.3	9.5	. .	15.8	14.2	. .	46.2	44.2

Sources: See table IV.1.

[a] Aged 45-54.

TABLE IV.7

Cumulative divorce rates among recent female marriage cohorts in 11 countries

(*Percentages*)

Region, country, duration of marriage[a]	*Marriage cohorts*			
	1948	*1953*	*1958*	*1963*
Eastern Europe				
Czechoslovakia				
5	3.6	4.4	4.4	5.9
10	6.7	8.4	8.5	..
15	9.0	11.2	11.7	..
20	10.8	13.6	..	..
25	12.4	..	..	..
Hungary				
5	3.4	5.6	5.5	8.0
10	7.2	11.9	11.0	..
15	10.1	15.5	14.8	..
20	12.2	18.0	..	..
25	13.9	..	..	..
Northern Europe				
Denmark				
5	5.6	5.1	4.5	4.4
10	11.4	10.7	10.1	..
15	14.3	13.7	14.0	..
20	16.4	16.1	..	..
25	18.1	..	..	..
Finland				
5	2.8	3.3	3.5	4.3
10	5.7	6.5	7.2	..
15	7.6	9.1	10.1	..
20	9.2	11.3	..	..
25	10.2	..	..	..
Norway				
5	1.4	1.6	2.3	2.7
10	3.6	4.0	5.2	6.8
15	5.2	5.7	7.5	..
20	6.5	7.2	..	..
25	7.6	..	..	..
Sweden				
5	4.0	3.9	4.5	5.4
10	8.5	8.3	9.3	..
15	11.2	11.4	13.3	..
20	13.5	14.3	..	..
25	15.5	..	..	..
United Kingdom:				
England and Wales				
5	0.8	0.8	0.9	1.5
10	3.1	2.8	4.3	..
15	4.6	4.9	7.6	..
20	6.2	6.9	..	..
25	7.6	..	..	..
Scotland				
5	0.5	0.5	0.6	0.9
10	1.9	1.7	2.6	..
15	2.6	3.0	4.8	..
20	3.4	4.3	..	..
25	4.2	..	..	..

TABLE IV.7 (*continued*)

Cumulative divorce rates among recent female marriage cohorts in 11 countries

(*Percentages*)

Region, country, duration of marriage[a]	*Marriage cohorts*			
	1948	*1953*	*1958*	*1963*
Western Europe				
Austria				
5	5.1	4.9	5.4	6.5
10	9.3	8.4	9.0	..
15	11.4	10.3	..	..
20	12.6	..	..	..
25	..	..	..	..
Netherlands				
5	2.0	1.6	1.7	1.9
10	3.9	3.2	3.5	..
15	5.2	4.4	5.2	..
20	6.2	5.8	..	..
25	7.4	..	..	..
Switzerland[b]				
5	..	..	..	..
10	6.4	6.8	6.7	..
15	8.8	9.0	9.2	..
20	10.3	10.8	..	..
25	11.4	..	..	..

Source: Estimates by the ECE secretariat based on national censuses and vital statistics.

[a] In years.

[b] Swiss nationals.

such declines in the 1950s, in all cases by only small amounts.[14]

Should these tendencies to increasing prevalence of divorce persist and accelerate, they could well signify a further substantial change in the European type of family cycle where mortality was seen as the main expected cause of marital dissolutions.[15] In this context, the data for women are more telling than those for men, among whom the incidence of both mortality and remarriage is rather smaller.

7. *Cohort measures of marital dissolution*

The cumulative rates of divorce among marriage cohorts shown in table IV.7 and of divorce plus widowhood combined in table IV.8 permit more direct interpretation of marital dissolution than do the time series of period measures discussed previously. For one thing, they are in closer accord with the notion of dissolution itself than are cross-section measures, such as are provided by censuses. For another they are also much less distorted by re-marriage factors.

Unfortunately, the availability of cohort data is limited, over both time and area. The data for recent marriage cohorts shown in the two tables cover only 11 countries, none of which is in southern Europe, and become increasingly truncated with recency of marriage. In a period of possibly rapid change of family patterns in all parts of Europe, these can prove to be especially damaging shortcomings.

Such as it is, however, the evidence is revealing on several grounds. It will be noted that the 11 countries align themselves into roughly three groups: those with cumulative divorce levels close to or exceeding 15 per cent among cohorts with 20 to 25 years duration of marriage (Czechoslovakia, Hungary, Denmark and Sweden), those with approximately 10 per cent levels (Finland, Austria and Switzerland), and a number below 8 per cent (Norway, England and Wales, Scotland and the Netherlands). With duration held constant, the majority of changes suggest rising divorce probabilities among successive cohorts, with only Denmark suggesting a possible exception among the cohorts married since 1950.[16] In all areas, the main build-up of cumulative rates tends to take place between 5 and 10 years of marriage. An important corollary, should this pattern continue to hold true, is that much larger bodies of evidence than are now available on lifetime divorce propensities

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[14] Since age-specific proportions divorced tend to be relatively stable over a broad range of the adult period of life, they are not shown here in conjunction with table IV.1. By and large, such proportions tend to move as suggested for the total population aged 15 and over, thereby differing considerably from the other three marital-status categories.

[15] Post-war tendencies to liberalize laws on divorce, especially in eastern Europe and the USSR, should be kept in mind in this connexion, as possibly one-time influences. An opposite legislative influence, in Romania in the late 1960s, is discussed below.

[16] The higher rates shown for 1948 compared with later cohorts in a number of other areas, such as Austria and the Netherlands, may well reflect post-war influence of a one-time nature.

TABLE IV.8

Cumulative divorce plus widowhood rates among recent female marriage cohorts in 11 countries

(*Percentages*)

Region, country, duration of marriage [a]	Marriage cohorts			
	1948	1953	1958	1963
Eastern Europe				
Czechoslovakia				
5	4.9	5.7	5.5	6.9
10	9.5	10.8	10.8	..
15	13.3	15.1	15.4	..
20	17.1	..	..	..
25	21.7	..	..	..
Hungary				
5	6.6	7.1	6.8	9.1
10	12.0	14.7	13.5	..
15	16.6	19.6	19.0	..
20	20.7	24.0	..	..
25	25.2	..	..	..
Northern Europe				
Denmark				
5	7.0	6.0	5.3	5.2
10	13.8	12.5	11.7	..
15	17.9	16.7	16.7	..
20	21.6	20.7	..	..
25	25.8	..	..	..
Finland				
5	6.5	5.1	4.9	5.5
10	11.4	10.0	10.0	..
15	15.5	14.7	15.0	..
20	19.9	19.8	..	..
25	25.2	..	..	..
Norway				
5	3.0	2.6	3.2	3.5
10	6.3	5.9	6.9	8.5
15	10.1	8.8	10.4	..
20	12.1	12.0	..	..
25	15.7	..	..	..
Sweden				
5	5.5	4.9	5.3	6.2
10	11.0	10.2	11.0	..
15	14.9	14.4	16.1	..
20	18.6	19.0	..	..
25	22.8	..	..	..
United Kingdom:				
England and Wales				
5	2.0	1.6	1.7	2.2
10	5.3	4.5	5.9	..
15	8.1	7.9	10.4	..
20	11.7	11.9	..	..
25	16.3	..	..	..
Scotland				
5	2.1	1.5	1.4	1.7
10	4.5	3.9	4.5	..
15	6.8	6.8	8.3	..
20	10.1	10.7	..	..
25	15.2	..	..	..

TABLE IV.8 (*continued*)

Cumulative divorce plus widowhood rates among recent female marriage cohorts in 11 countries

(*Percentages*)

Region, country duration of marriage [a]	*Marriage cohorts*			
	1948	*1953*	*1958*	*1963*
Western Europe				
Austria				
5	6.9	6.7	6.7	7.8
10	13.1	11.6	12.0	..
15	16.8	15.2	..	..
20	20.2	..	..	..
25	..	..	..	..
Netherlands				
5	3.1	2.3	2.4	2.6
10	5.9	4.8	5.0	..
15	8.3	7.0	7.8	..
20	10.9	10.1	..	..
25	14.7	..	..	..
Switzerland[b]				
5	4.4	4.4	4.1	4.2
10	9.1	9.0	8.7	..
15	12.8	12.4	12.4	..
20	16.1	16.0	..	..
25	20.0	..	..	..

Source: See table IV.7. [a] In years. [b] Swiss nationals.

should soon become known for cohorts in the main ages of marriage and reproduction.

The importance of widowhood, compared with divorce, even at the relatively non-advanced ages involved, is brought out by the considerably higher percentages shown for the two causes combined in table IV.8 than in table IV.7. Among cohorts with 15 or more years of marriage duration, the differences between the two tables approach 50 to 100 per cent, or even more for many cohorts. The predominance of the recent trends in divorce over those in widowhood is suggested by the modal tendency to rising percentages from the two causes combined in the face of typically declining mortality.

C. Flow-type measures of marriage, divorce and re-marriage

1. *Crude marriage rates*

The analysis of census data suggested some significant changes in both trends and patterns of marital status in European countries since 1950, with generally higher proportions married at young ages and also higher proportions ultimately marrying (by ages 45-49). These intercensal changes are of course determined essentially by the annual flow of marriages occurring between one census and the next (although the conjugal status of net migrants will also have an impact). The simplest index for measuring such a flow is the crude marriage rate (marriages per 1,000 of population), but as this—like the crude birth rate—does not correct for changes in age structure, it may not reflect precisely trends suggested by cross-sectional census data.

Figure 4 traces the history of European crude marriage rates (i.e. marriages per 1,000 of population) since 1950, and table IV.9 sets down five-yearly averages from 1945 to 1973. Some very broad trends are indicated by the figure, particularly the downward trend of rates in countries of eastern Europe until about 1964, followed by another upward trend. The countries of northern Europe tend to show a decline to about 1960, then a rise until about 1966, followed by a further fall, notably in the case of Sweden. In western Europe basic trends were less clear: some falls are apparent in the 1960s (e.g. Switzerland and Austria) but in other countries the rates rose sharply (Netherlands in particular, and also France). In southern Europe the country patterns are also variable, though most show a rising trend after about 1968.

It is also clear from the first two columns of table IV.9 that in the years immediately after the Second World War many European countries were experiencing a marriage boom, largely explained by the surge of marriages which had been postponed during the war. But the fact that the rates after 1945 were also high for such neutral countries as Sweden and Switzerland suggests that other factors were also at work, one of which seems to have been the onset of a tendency to marry earlier.

Before turning to this aspect, however, it is necessary to consider the question of how current marriages have been distributed between various conjugal status groups.

2. *First-marriage rates*

Table IV.10 shows clearly that there was a surge of first marriage during the late 1940s in much of Europe,

FIGURE 4

Crude first marriage rates

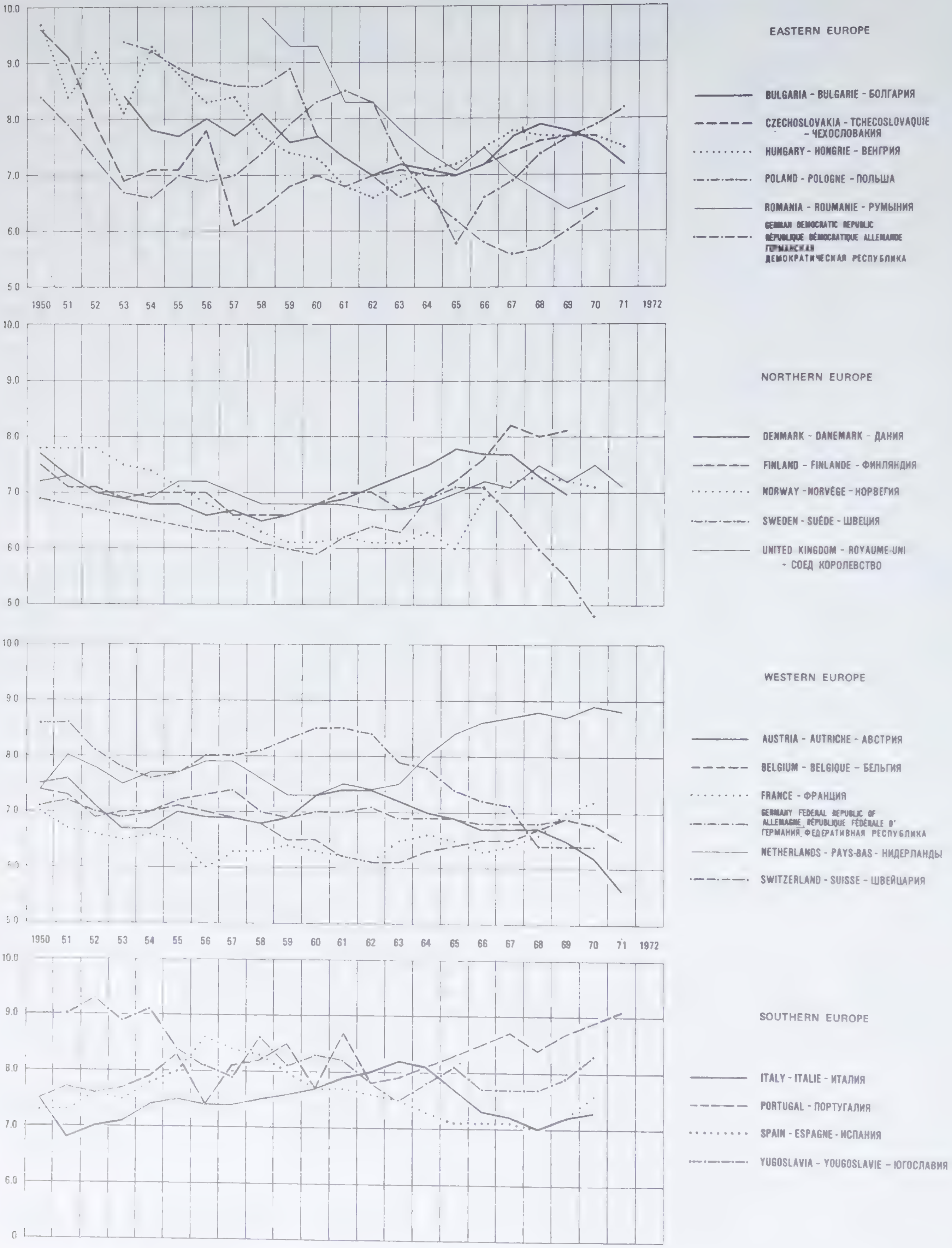

TABLE IV.9

Crude marriage rates, in 26 countries, 1945-1949 to 1970-1973

(Average annual rates per 1,000 population)

Region and country	*1945-1949*	*1950-1954*	*1955-1959*	*1960-1964*	*1965-1969*	*1970-1973*
Eastern Europe						
Bulgaria	11.2	9.4	8.8	8.3	8.5	8.4
Czechoslovakia	9.9	9.1	7.7	7.8	8.3	9.2
German Democratic Republic	8.9	9.8	8.8	9.1	7.2	7.8
Hungary	10.4	10.6	9.7	8.5	9.2	9.4
Poland	11.2	10.3	9.3	7.6	7.4	9.1
Romania	11.0	10.9	11.4	9.7	8.0	7.4[a]
Northern Europe						
Denmark	9.3	8.4	7.6	8.1	8.4	6.7[a]
Finland	11.0	8.0	7.4	7.5	8.5	8.0
Ireland	5.6	5.4	5.4	5.5	6.2	7.3
Norway	8.9	8.2	7.0	6.6	7.4	7.4
Sweden	8.9	7.5	7.0	7.1	7.1	4.9
United Kingdom:						
England and Wales	9.1	8.0	7.7	7.5	8.1	8.4
Northern Ireland	7.1	6.7	6.7	7.1	7.4	7.8
Scotland	8.7	8.1	8.1	8.2	8.1	8.1
Western Europe						
Austria	9.0	8.5	8.1	8.3	7.6	6.9
Belgium	9.7	7.9	7.5	6.9	7.2	7.3
France	10.1	7.5	7.0	7.0	7.2	7.8
Germany, Federal Republic of	10.1	9.7	9.0	9.1	7.8	6.8
Netherlands	9.3	8.4	8.2	8.0	9.0	8.9
Switzerland	8.4	7.8	7.9	7.7	7.5	6.9
Southern Europe						
Greece	5.6	7.7	8.2	8.4	8.6	7.7[a]
Italy	8.4	7.3	7.6	8.1	7.3	7.6
Portugal	7.9	7.9	8.3	8.1	8.3	9.5
Spain	7.6	7.7	8.4	7.6	7.2	7.5
Yugoslavia	12.4	10.4	9.0	8.8	8.6	8.9
USSR		11.5[b]	12.1	9.7	9.0	9.7[a]

Sources: United Nations, *Demographic Yearbooks*, various years; national reports on vital statistics.

[a] 1970-1972.

[b] One year only.

for nearly all 1946-1950 values are above those of 1951-1955.[17] Only Norway and the Netherlands for both sexes, along with Hungary for males and the Federal Republic of Germany for females, show opposite comparisons and only the Netherlands among these rose again in the next five-year period.

Since about 1950, however, trend patterns have been highly diverse. Total first marriage rates among males have been tending downward in Czechoslovakia, the German Democratic Republic, Romania, the Federal Republic of Germany and Switzerland; for females the same tendency is observed in Czechoslovakia, Poland, Romania, Denmark, Sweden, England and Wales and Switzerland. In addition, there were substantial declines in this rate between the early and late 1960s among the male populations of Denmark, Sweden and Austria, among females in the German Democratic Republic, and among the populations of both sexes in France and Italy.

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[17] Since the measures of first marriages used in table IV.10 represent simple sums of age-specific rates, they are formally free of distortions arising from age-structural variations. More strictly, the table assumes implicitly a uniform or flat age distribution for all areas and periods. Sums of rates such as the ones shown can, under special assumptions, be interpreted as the life-time number of first marriages that a hypothetical (synthetic) cohort would experience if age-specific first marriage rates were those found during a single calendar period. Under static situations, in which successive real birth cohorts all had the same or nearly the same age-specific probabilities of first marriage (and assuming also very low mortality and migration between birth and the end of the main ages of first marriage), the sum of period and real cohort rates would be approximately the same. In fact, however, as evidenced by the large number of countries in table IV.10 which show values above unity, or impossibly close to this level, such a synthetic cohort approach, while providing a useful index of trends, cannot be interpreted as measuring real levels. The reason why the synthetic index rises above 100 is simply the early post-war upsurge in marriages at specific ages. In times of such rapid change, the synthetic index and real cohort experience can be very widely at variance.

On the other hand, uptrends since 1950 have been the rule for one or both sexes in Bulgaria, the Netherlands and Yugoslavia. In Finland, Norway, Belgium, France and possibly Spain the movements in total rates have been undulating rather than more or less identifiably sustained in direction.

Despite these diversities in the totals of first-marriage rates and changes in age-at-marriage (described in section D of this chapter), the age-sex-specific marriage rates have tended to be broadly stable over time. This may be illustrated by considering the experience of two countries which have displayed markedly dissimilar total first-marriage rates and trends, as shown in table IV.10. Figure 5 sets out the age patterns for the German Democratic Republic and Sweden in 1950, 1960 and 1970. The peaked curves seen in this chart for each sex in the German Democratic Republic and for females in Sweden represent the most common patterns; that for Swedish males, features a more even spread of probabilities over the 20-29 age interval. It can be seen that the age-specific first-marriage rates have generally followed the time path found to hold for the totals of such rates.

3. *Remarriage rates*

The high 1950 rates shown in table IV.11, where female remarriages are expressed relative to eligible population, consisting of divorced plus widowed females, again reflect major adjustments taking place shortly after the war. In every country but one (Czechoslovakia) where 1950-1960 and 1960-1970 changes can be compared, the earlier change is the larger; in most instances the earlier declines were substantial in eastern, northern and western Europe, where high rates are the most prevalent. Between 1960 and 1970 the direction of change in remarriage rates was mixed in eastern Europe, downward in northern Europe except the United Kingdom, and predominantly downward also in western Europe. The lowest levels by far throughout the post-war period have been among the Catholic populations of Ireland and southern Europe, where the trends have been predominantly downward. Although the levels are also low throughout in Northern Ireland, there was a slight rise there in 1960-1970 compared with the earlier decade.

The highest average rates have tended to be in eastern Europe, while most northern and western populations,

Table IV.10

Total first-marriage rates, by sex, in 20 countries, 1946-1950 to 1966-1970

(*Sums of age-specific rates of first marriage*)

	Males					*Females*				
Region and country	*1946-1950*	*1951-1955*	*1956-1960*	*1961-1965*	*1966-1970*	*1946-1950*	*1951-1955*	*1956-1960*	*1961-1965*	*1966-1970*
Eastern Europe										
Bulgaria	1.17	0.99	1.06	1.06	1.11	1.17	1.02	1.12	1.06	1.09
Czechoslovakia	1.23	1.01	0.99	1.00	0.95	1.21	1.04	1.02	0.97	0.92
German Democratic Republic	1.71	1.23	1.01	0.95	0.89	1.06	1.02	1.02	1.07	0.95
Hungary	1.25	1.34	1.07	0.95	1.02	1.14	1.11	1.06	0.93	0.99
Poland	..	1.23	1.12	0.99	1.06	..	1.14	1.15	1.00	0.98
Romania	..	..	1.28	1.14	1.02	..	..	1.33	1.20	0.99
Northern Europe										
Denmark	1.03	0.99	0.99	1.03	0.89	1.08	1.03	0.99	0.99	0.91
Finland	1.20	0.92	0.91	0.93	0.91	1.10	0.93	0.94	0.92	0.93
Norway	1.01	1.02	0.99	0.97	0.98	1.09	1.13	1.06	0.96	0.98
Sweden	0.97	0.94	0.94	0.98	0.78	1.06	1.01	0.97	0.96	0.79
United Kingdom:										
England and Wales	1.02	0.99	1.03	1.01	0.98	1.07	1.05	1.08	1.01	0.99
Western Europe										
Austria	..	0.95	1.02	0.99	0.90	..	0.99	1.02	1.01	0.98
Belgium	1.04	0.95	0.99	0.98	0.97	1.10	0.98	1.03	1.01	0.97
France	1.17	0.87	0.87	0.98	0.93	1.13	0.91	0.96	1.03	0.91
Germany, Federal Republic of	1.38	1.15	1.08	0.97	0.92	1.04	1.07	1.06	1.09	1.04
Netherlands	0.98	1.03	1.04	1.07	1.07	0.97	1.04	1.08	1.09	1.11
Switzerland	0.97	0.95	0.96	0.92	0.85	0.99	0.93	0.96	0.93	0.88
Southern Europe										
Italy	1.07	0.89	0.94	1.01	0.94	0.99	0.85	0.94	1.03	0.96
Spain	..	0.95	1.23	1.00	1.00	..	0.88	1.02	1.01	0.98
Yugoslavia	..	1.15	1.01	1.05	1.09	..	1.05	1.02	1.09	1.05

Source: National reports on vital statistics.

FIGURE 5

Age-specific rates of first marriage, by sex, in the German Democratic Republic and Sweden, about 1950, 1960 and 1970

(Per 1,000 population in sex-age group)

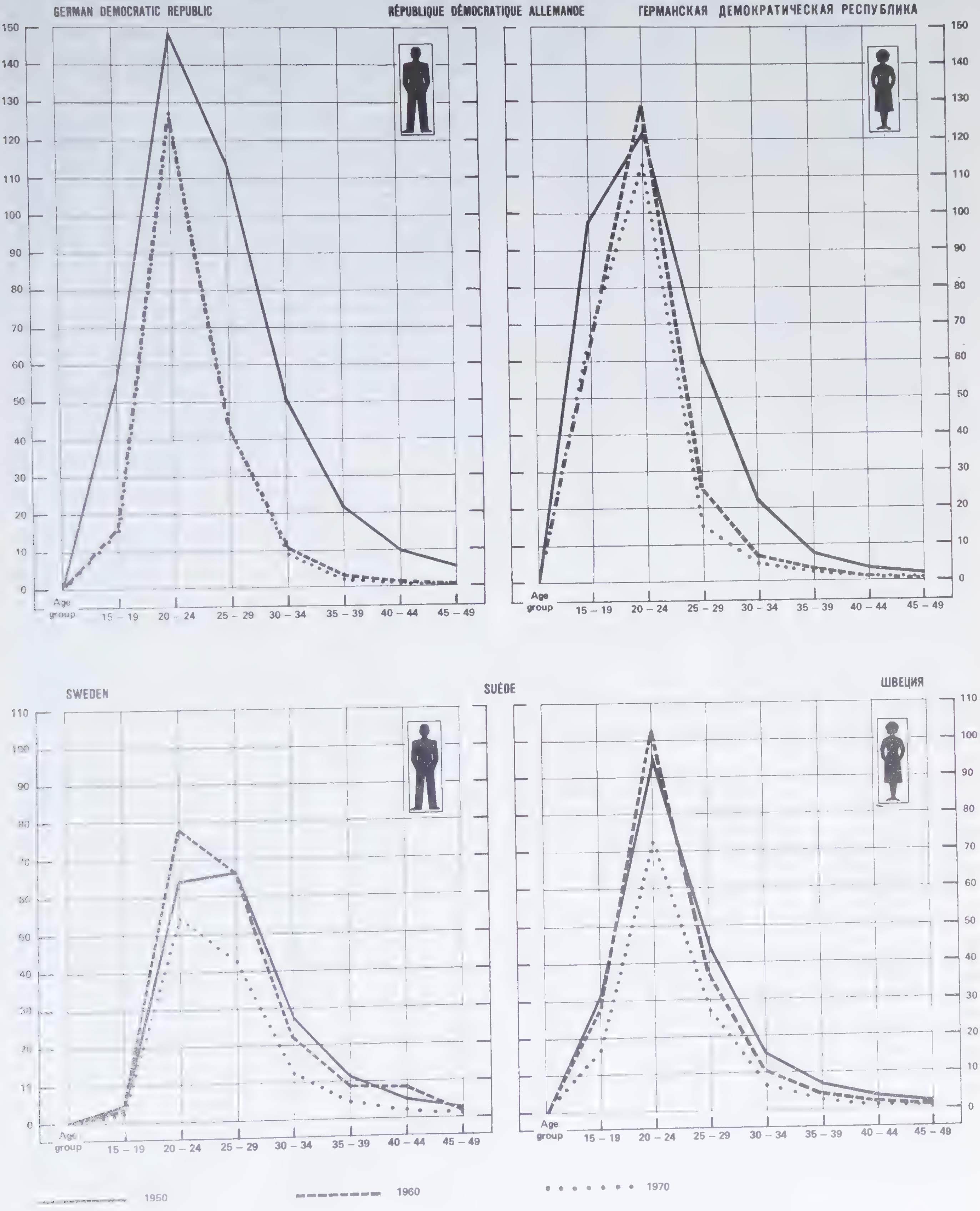

TABLE IV.11

Female remarriage rates, in 25 countries, around 1950, 1960 and 1970

(*Average annual rates per 1,000 divorced plus widowed women*)

Region and country	*1950*	*1960*	*1970*
Eastern Europe			
Bulgaria	28.0	19.8	20.4
Czechoslovakia	16.3	12.5	14.6
German Democratic Republic	34.0	13.5	12.6
Hungary	22.5	21.4	20.8
Poland	..	9.6	11.0
Romania	..	..	22.8
Northern Europe			
Denmark	30.4	20.1	16.2
Finland	16.7	11.1	10.2
Ireland	2.5	1.6	1.2
Norway	11.4	11.2	8.6
Sweden	16.9	14.7	9.7
United Kingdom:			
England and Wales	16.9	12.8	18.8
Northern Ireland	5.8	4.1	4.8
Scotland	11.0	8.7	12.2
Western Europe			
Austria	17.5	11.2	9.8
Belgium	18.1	10.2	9.7
France	9.8	8.9	7.9
Germany, Federal Republic of	27.7	10.8	11.0
Netherlands	31.8	13.8	13.3
Switzerland	14.6	13.0	11.8
Southern Europe			
Greece	..	5.0	4.6
Italy	2.7	1.8	1.4
Portugal	5.2	4.0	4.2
Spain	2.9	2.0	1.7
Yugoslavia	15.3	15.5	13.2

Sources: See table IV.1.

along with Yugoslavia, have occupied intermediate positions. Largely as a result of declines from high early post-war levels in a number of countries, the extent of international dispersion diminishes sharply between 1950 and later periods.

4. *Divorce*

Available series on annual numbers of divorces or rates of divorce often have serious limitations for comparing different societies or periods. Separations are usually excluded; reporting of annulments varies; discrepancies between reported numbers of court divorce actions and actual subsequent divorces are sometimes large; the break-up of non-legalized unions is ignored; comparative national or sub-national behaviour patterns may be obscured or dominated by legal and cultural factors which can differ widely;[18] prevalence of divorce is not the same as numbers of persons divorced (because of multiple divorces involving the same person). In addition, crude divorce rates are subject to the usual risks of distortion from age structure, while time series of period measures may be at variance with real cohort series during periods of rapidly changing behaviour. Whereas stock or census-type measures of persons in a divorced status often include separations, flow or vital statistics measures usually exclude these.

Nevertheless, the various indicators presented in table IV.12 are adequate to document a number of major recent developments. The first four columns list national time series of crude divorce rates; the next four represent the sums of duration-specific divorce rates for women aged 15 and over (corresponding to the total fertility rate when age-specific birth rates are summarized); the last three relate annual divorces to numbers of currently married women.

The difference between the 1950s and the 1960s shown by the various indicators helps to highlight a recent development which, if sustained, could become one of Europe's most significant social tendencies of the late twentieth century. During the 1950s the measures often change in variable directions, with rates moving predominantly downward in the German Democratic Republic, Denmark, England and Wales, Scotland, Austria and the Federal Republic of Germany. Probably also at least Norway, the Netherlands and Switzerland should be included in this group.

In marked contrast, one or more of the indicators—and often all when these are documented—show striking upturns practically everywhere in the 1960s in eastern, northern and western Europe as well as in the USSR. The apparent exception of Romania, for which the recent indicators show declines, is explained by a change in the divorce law about 1967; since that year, in fact, the Romanian divorce rate has been rising. Furthermore, so far as can be judged from post-1970 crude rates, the tendency to rising divorce has generally continued since the late 1960s.[19]

A good deal more will have to be known, not only for future years, but also about the finer structure of the trends already seen, before firm interpretations or forecasts are possible. However, even the present data suffice to hypothesize that a new era of family instability may be appearing in most European societies.

D. Age at marriage : trends and differentials

The trends with respect to age at marriage in European countries between 1950 and 1970 are illustrated in figure 6. Clearly the trend has been overwhelmingly downwards, towards younger ages of marriage for both males and females. In terms of averages, these graphs mean that the ages of women at marriage declined from

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[18] Presupposition about such effects may be straightforward or risky. On the one hand, the rate is necessarily zero in Ireland and Spain, where divorce is not legally recognized. On the other hand, easy availability of divorce in Norway is accompanied by a relatively low rate of divorce, while the predominance of Catholics in Austria does not preclude one of the highest rates in western Europe.

[19] See *Demographic Yearbook 1972* (United Nations publication, Sales No. E/F.73.XIII.1), table 30. Of the 20 countries shown there which are included in table IV.12, 15 showed a two-year rise of 10 per cent or more to the latest year documented, usually 1971 or 1972.

TABLE IV.12

Crude and total divorce rates, 1951-1955 to 1966-1970, and divorce rates among currently married women, about 1950, 1960 and 1970, in 23 countries

Region and country	Crude rates 1951-1955	1956-1960	1961-1965	1966-1970	Total rates 1951-1955	1956-1960	1961-1965	1966-1970	Married women rates 1950	1960	1970
Eastern Europe											
Bulgaria	0.6	0.9	1.0	1.1	..	..	12.6	13.8	3.2	3.4	3.7
Czechoslovakia	1.0	1.1	1.2	1.5	10.0	13.0	15.3	19.6	4.0	4.9	6.9
German Democratic Republic	1.6	1.3	1.4	1.6	..	..	..	..	10.9	6.3	6.5
Hungary	1.3	1.7	1.8	2.1	14.4	18.2	20.5	23.8	5.8	6.6	8.4
Poland	0.5	0.5	0.6	0.9	..	..	7.7	..	2.1	2.3	4.8
Romania	1.5	1.8	1.9	0.4	..	..	..	..	..	6.9	5.1
Northern Europe											
Denmark	1.5	1.4	1.4	1.6	18.9	18.4	18.2	21.2	6.8	6.1	7.5
Finland	0.8	0.8	0.9	1.2	10.5	10.9	12.7	15.6[a]	4.6	4.0	6.0
Norway	0.6	0.6	0.7	0.8	8.7	8.5	10.0	12.1	3.2	2.8	3.7
Sweden	1.2	1.2	1.2	1.4	15.4	16.0	16.5	20.8	4.9	4.7	6.7
United Kingdom:											
England and Wales	0.6	0.5	0.7	1.0	8.3	6.7	8.9	13.3	2.6	2.1	5.5
Northern Ireland	0.1	0.1	0.1	0.1	..	..	..	..	0.7	0.5	1.0
Scotland	0.4	0.3	0.4	0.8	5.5	3.8	4.8	9.0	1.7	1.5	3.6
Western Europe											
Austria	1.4	1.2	1.1	1.3	16.1	14.1	14.0	14.9[b]	6.7	5.0	5.9
Belgium	0.5	0.5	0.5	0.6	..	..	7.5	9.2[a]	3.1	2.0	2.6
France	0.7	0.7	0.7	0.7	..	..	..	..	3.0	2.8	3.1
Germany, Federal Republic of	1.0	0.8	0.9	1.1	..	12.0	12.6	14.7[a]	6.8	3.4	5.0
Netherlands	0.5	0.5	0.5	0.6	7.7	6.8	7.0	9.1	4.4	2.2	3.3
Switzerland	0.9	0.9	0.8	1.0	12.5	12.3	12.6	13.6[a]	4.2	3.9	4.5
Southern Europe											
Greece	..	0.3	0.4	0.4	..	..	..	..	..	1.5	0.8
Portugal	0.1	0.1	0.1	0.1	..	..	..	..	0.6	0.4	0.2
Yugoslavia	0.9	1.2	1.1	1.0	..	..	..	..	4.4	5.1	4.1
USSR	..	1.0	1.4	2.7	..	..	13.2	26.2	..	5.4	11.7

Sources: See table IV.1.

NOTE. Crude rates are per 1,000 population of all ages; total rates are sums of duration-specific divorce rates; married women rates are per 1,000 currently married women of all ages.

[a] 1966-1969.

[b] 1966-1967.

about 26-27 years to 24-25 years in most Scandinavian countries and in England and Wales, and from around 27-28 years to 24-25 years in several western countries. The drop was smaller in Belgium, France, Italy and Portugal and in most east European countries, where it rarely exceeded an average of one year. By the late 1960s, however, the inter-country variation was considerably smaller than it had been around 1950. By 1970, the lowest ages, around 23 years, applied in Bulgaria and Romania, and the highest (above 25) in Ireland, Sweden and Switzerland. With an age difference of some two years, males showed the same trends.

As the data on which these charts are based are period time-series, they would be subject to distortion by changes in age structure. However, a cohort analysis of first marriages in 17 countries for which the approximate data were available, is shown in table IV.13. This indicates that for cohorts born between 1920 and 1940, eastern Europe has persistently had lower average ages at first marriage than any of the other regions, while the average ages in northern and western Europe have tended to be similar. Although the data are incomplete geographically, they suggest persistent inter-regional differences for successive cohorts over time.

The cohort data of table IV.13 further indicate, however, the same marked tendency to declining average age at first marriage among successive cohorts, similar to the period trends which were apparent in the case of all marriages illustrated in figure 6. Only Yugoslavia for both sexes, plus Bulgaria and France for males show contrary tendencies among the indicated four groups. For the 17 countries as a whole, the average for both sexes fell steadily among more recent cohorts to the point where a full year difference between oldest and youngest cohorts can be observed. Since this has been true for both males and females, the difference between

FIGURE 6

Trends in average age at marriage, 1950-1970

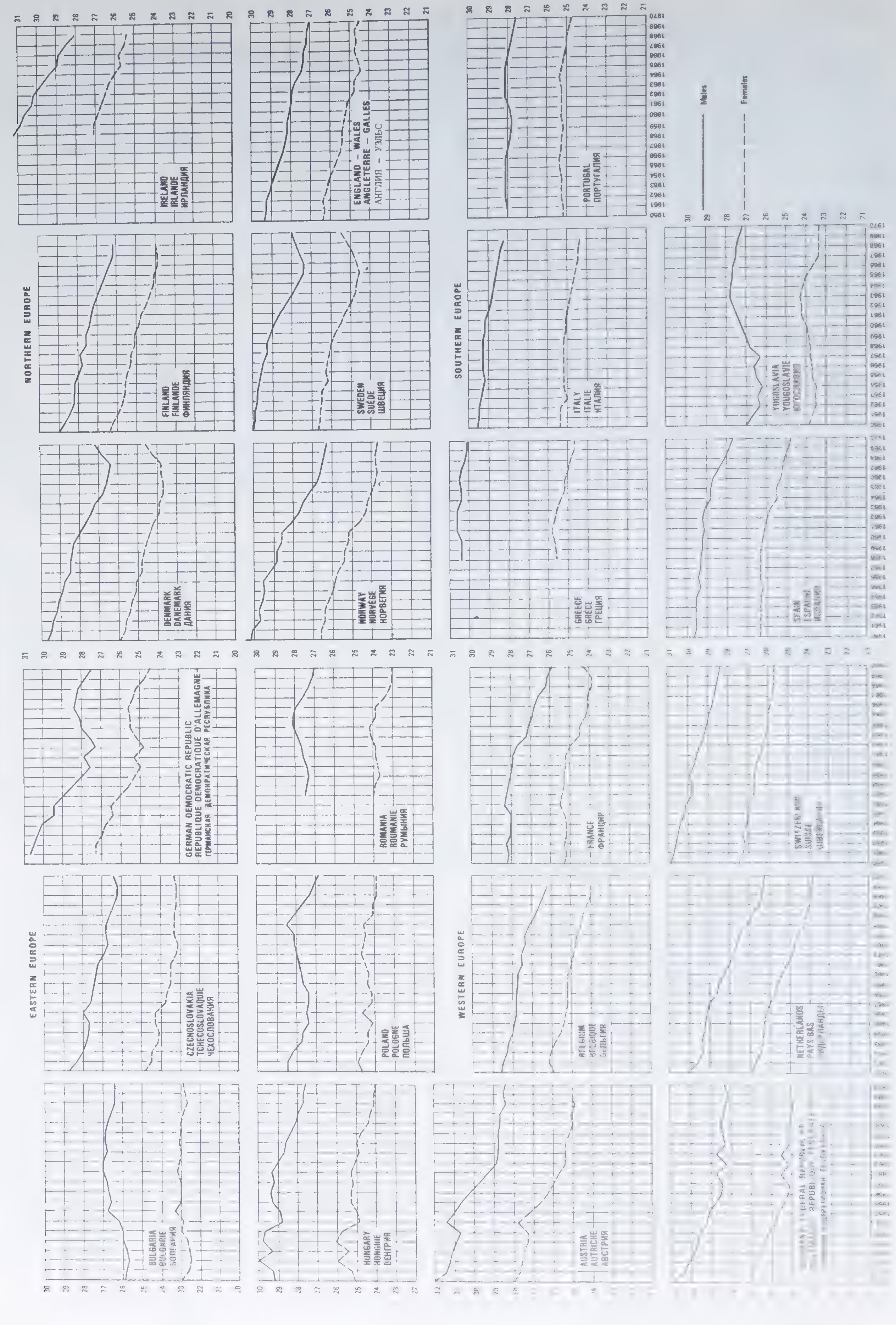

TABLE IV.13

Average age at first marriage, by sex, among birth cohorts of 1921-1925 to 1936-1940, in 17 countries

(*Age in years*)

Region and country	*Males*				*Females*			
	1921-1925	*1926-1930*	*1931-1935*	*1936-1940*	*1921-1925*	*1926-1930*	*1931-1935*	*1936-1940*
Eastern Europe								
Bulgaria	23.7	23.8	23.9	..	21.6	21.3	21.0	20.7
Czechoslovakia	26.3	25.7	25.3	24.8	23.5	22.4	22.0	21.6
German Democratic Republic	26.5	25.0	24.1	23.8	24.5	24.0	23.1	22.2
Hungary	26.3	25.3	25.1	24.9	23.2	22.3	21.7	21.5
Poland	..	25.6	25.4	25.3	..	23.0	22.7	22.5
Northern Europe								
Denmark	26.4	26.0	25.6	25.3	23.4	22.9	22.7	22.6
Finland	26.1	25.9	25.7	25.5	24.0	23.9	23.6	23.5
Norway	28.1	27.4	26.5	25.9	25.5	24.6	23.6	23.1
Sweden	27.3	27.0	26.3	26.1	24.3	23.9	23.5	23.4
Western Europe								
Austria	27.4	26.9	26.6	26.3	25.3	24.6	24.4	24.1
Belgium	26.1	25.5	25.1	24.7	23.6	23.0	22.4	22.3
France	25.6	25.3	25.8	25.9	23.6	23.1	23.1	22.7
Germany, Federal Republic of	27.4	26.6	26.2	26.2	25.3	24.8	24.2	23.7
Netherlands	27.4	27.1	26.7	26.2	25.3	24.8	24.4	23.9
Switzerland	28.4	27.9	27.4	26.9	25.8	25.6	25.2	24.6
Southern Europe								
Greece	29.4	29.0	28.7	28.5	25.8	25.4	25.3	24.8
Yugoslavia	24.4	24.3	24.6	24.8	22.4	22.1	22.4	22.2

Source: Estimates by the ECE secretariat.

the sexes has remained fairly stable at around two to three years. International variations in average age have also shown a steadily declining path over time. Whether these modal tendencies to 1970 are more recently being continued, interrupted or reversed cannot be judged with the data as yet available. Viewed retrospectively, however, it seems clear that the declines so much in evidence in the 1950-1970 period often marked a continuation—and sometimes an acceleration—of downtrends under way over much longer parts of this century.[20]

Thus basically, the same conclusions follow from both the period data relating to average age of all marriages (figure 6) and the cohort data relating to first marriages (table IV.13). In both, the trends over the past twenty-five years or so have been clearly towards patterns of younger marriage for both males and females. In other words, neither the variations in age composition nor trends towards higher rates of remarriage (which would tend to raise the averages of the period rates in figure 6) have distorted the trend dominated by the cohort shifts in first marriages analysed in table IV.13.

Some social characteristics

Age at marriage can be further examined in some of its socio-economic dimensions from a series of fertility sample surveys taken in a dozen countries between the late 1960s and early 1970s.[21] Table IV.14 presents for seven countries measures of average age at marriage of men and women in relation to marriage duration, rural/urban residence, husband's occupation and educational attainment, in each case for the entire samples of respondents. In addition, family income and wife's employment status are shown for urban sub-samples. The size of the sample varied from about 1,000 respondents (currently married, once married women below 45) in Finland to more than 8,000 in Hungary.

Since decreasing duration of marriage is closely associated with decreasing age of respondent, and low marriage age necessarily causes the exclusion of later-age marriages in estimating average age, the variations by duration may be partly a result of statistical truncation. Thus, among the short durations a rise in average age with rising duration may simply reflect the fact that the

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[20] See Hajnal, *loc. cit.* and Dixon, *loc. cit.*; also J. Hajnal, "European marriage patterns in perspective", in D. V. Glass and D. E. C. Eversley, eds., *Population in History: Essays in Historical Demography* (London, Edward Arnold, 1965), pp. 101-143; and Bogue, *op. cit.*, especially table 11.1.

[21] The fertility aspects of these surveys were analysed in *Fertility and Family Planning in Europe around 1970: A Comparative Study of 12 National Surveys* (forthcoming in the United Nations Population Studies series); see the first two chapters for a detailed description of the surveys.

TABLE IV.14

Average age at marriage of wives and husbands by marriage duration, rural/urban residence, educational attainment, urban family income and urban employment status of wife, in seven countries, about 1970

	WIVES							HUSBANDS						
	Belgium	*Czechoslovakia*	*Denmark*[a]	*Finland*	*France*	*Hungary*	*Yugoslavia*	*Belgium*	*Czechoslovakia*	*Denmark*[a]	*Finland*	*France*	*Hungary*	*Yugoslavia*
Duration of marriage														
All	*21.8*	*21.3*	*21.5*	*21.9*	*21.3*	*21.3*	*20.6*	*24.5*	*24.8*	*25.2*	*24.7*	*24.4*	*25.7*	*24.0*
0-4	22.2	21.4	21.8	22.2	21.6	21.7	20.7	24.7	24.5	24.8	24.6	24.3	25.7	24.5
5-9	22.3	21.5	21.6	22.3	21.7	21.5	21.2	24.7	24.9	25.1	25.0	24.8	26.0	24.7
10-14	22.1	21.4	21.5	22.5	21.9	21.6	21.1	24.6	25.2	25.5	25.4	24.8	25.9	24.1
15+	20.5	20.7	21.1	20.8	20.3	20.6	19.9	24.0	24.9	25.4	24.1	23.8	25.5	23.1
Present residence														
Rural	22.4	21.0	21.4	21.9	21.5	20.9	20.3	24.9	24.7	25.6	25.3	24.9	25.5	23.4
Urban	21.7	21.4	21.5	21.9	21.2	21.7	21.2	24.4	24.9	25.0	24.2	24.2	26.1	24.9
Socio-economic status of husband														
Outside agriculture[b]														
Non-manual	22.4	21.7	21.9	..	21.7	22.0	21.4	25.0	25.5	25.1	..	24.4	26.8	25.3
Manual	21.2	20.9	20.9	..	20.8	21.1	20.5	24.0	24.2	24.4	..	23.9	25.2	23.6
Agriculture	23.5	20.9	21.6	..	21.7	20.8	20.4	26.5	24.9	26.1	..	25.6	25.6	23.5
Educational attainment[c]														
Less than elementary	20.9[d]	20.8	..	..	20.9[d]	22.3	20.5	25.3[d]	24.2	..	..	23.9[d]	26.6	23.8
Elementary	21.4		21.3	21.6	21.2	21.4	20.5	24.2		25.2	24.6	24.7	25.9	23.0
Lower secondary	22.0		21.1	21.9	21.2	21.0	20.2	24.4		24.4	24.6	24.2	25.5	23.9
Higher secondary	22.9	21.5	21.9	23.6	21.2	21.9	21.9	24.9	25.1	25.4	25.3	23.9	25.8	25.1
Post-secondary	24.4[d]	23.0	22.5		22.9	23.8	23.5	27.1	26.3	25.6		25.3	27.7	26.1
Family income (urban)														
Very low	21.5	20.9	20.9	21.0	21.6	21.5	20.7	24.7	24.3	24.3	23.2	24.8	26.5	23.7
Low	21.5	21.2	21.3	22.1	20.6	21.7	20.7	23.9	24.7	25.2	24.2	23.8	26.1	23.9
Medium	21.3	21.4	21.0	21.8	20.9	21.4	20.8	24.1	24.9	24.1	24.1	23.5	25.4	24.5
High	22.0	21.8	21.5	22.2	21.2	21.6	21.5	24.6	25.4	25.0	24.4	24.3	25.8	25.4
Very High	22.9	22.2	22.8	22.9	21.9	22.0	21.9	26.1	26.0	26.1	25.9	24.8	26.8	25.8
Wife's employment status (urban)														
Working now	21.8	21.4	21.7	24.2	24.2	26.2	21.9	..	..	..	..	..	..	..
Not working now, worked before	21.5	20.9	21.3	24.0	24.0	25.9	20.6	..	..	..	..	..	..	..
Never worked	21.7			24.3	24.3			..	..	..	..	..	..	..

younger birth cohorts in a shorter duration had not had their older-age marriages recorded to the same extent as the older cohorts represented in the next higher duration category. However, opposite bias would apply to the longer durations, since survey respondents were limited to women under age 45. As a result, longer durations tend to exclude women married late in life. This may explain, at least in part, the fact that the averages shown for the over-15 group are so consistently below the averages for shorter durations, particularly among females. It may also help to explain the contrasts suggested between the present table and the patterns shown earlier for birth cohorts in table IV.13, where the oldest of the indicated cohorts had invariably the highest average age at marriage.[22]

To the extent that other comparisons shown in table IV.14 are not analogously vitiated by age composition or other distorting elements, it would appear that education, family income (among urban wives) and at least some occupational distinctions have consistent effects cross-nationally on the timing of marriages. For each sex, higher education is associated with higher average age of marriage, the effect being especially marked between higher secondary and post-secondary groups. Income and marriage age co-vary more or less consistently among urban residents, though with no tendency to marked differentials and not without some exceptions.[23] Non-manual occupation of husbands outside agriculture is consistently associated with higher age of marriage among both wives and the husbands themselves, when compared with manual occupations outside agriculture, while showing no consistent relation with agricultural occupations.

In the three socialist countries—Czechoslovakia, Hungary and Yugoslavia—both men and women appear to marry earlier in the rural than in the urban areas and a similar pattern applies to the associated breakdown into agricultural and non-agricultural occupations of husbands. Age composition or other unascertainable factors affecting the data may explain the fact that amongst urban wives, those who work and those who have never worked show practically equal ages of marriage when they can be compared (in Belgium, Finland and France). Only when working wives are compared with all non-working wives, including those previously but not currently employed, do they show higher average ages of marriage, and even here two of the four differences are rather small.

Given the geographic and other limitations of the data in table IV.14, these summary descriptions should be regarded as hypotheses rather than as generalizations concerning Europe or any of its regions. Unfortunately, age at marriage in its demographic and socio-economic aspects is not only among the conceptually most subtle parts of nuptiality analysis but also among its least well documented ones.

E. Summary and prospects

Whether marriage and the family in Europe will continue to evolve according to historical norms or become subject to radical change is a question which, almost by definition, offers a major challenge to long-range forecasters. As an institution, the family has remained unchanged for centuries in many of its essentials, and even the marked changes of the last few decades might well be regarded as more clearly supporting a forecast of continuity than of any basic discontinuities. Many recent decelerations or reversals of trend, such as from higher to lower marriage rates in a number of countries, from consistently falling to variably changing percentage single, or from declining average age of marriage among both sexes to a more mixed pattern, might as readily prove to be fluctuations about fixed norms as be taken as early signals of major change.

However, sharp discontinuities with past patterns can no longer be dismissed as too improbable to warrant consideration. One such is the sharp increase in current divorce rates as well as in lifetime divorce among recent marriage cohorts in a number of countries. Another is the case of Sweden, which has often been a forerunner of major socio-demographic developments in other parts of the continent and could again be leading the way, in its recent very sharp plunge in marriage rates and concomitant increase in average age at first marriage.

But perhaps more suggestive so far than any of these factors have been indirect indications of major changes in the substantial decline in fertility in all parts of Europe, often rapidly approaching or going below replacement levels without any apparent loss of downward movement so far; the swiftly changing role and rights of women in both family and extra-familial connexions; the greatly expanded acceptance and use of contraceptive practices (within and outside marriage); liberalization of divorce and abortion laws in many areas; the unabated ferment within the Catholic Church regarding marital, familial and fertility canons. Further reinforcement for these influences has come from the effects of inflation on real income among large sectors of the population and from the rising real cost of family formation and maintenance. Social and economic forces seem therefore combined in an apparent pattern of cumulative causation. If continued, such forces could imply a profound transformation in some of Europe's most basic and stable social institutions.

Given the direct relations linking nuptiality with family formation and household composition, the increased likelihood of major transformations in family structure, and the demographic and socio-economic consequences that could flow from such changes, it would seem desirable to encourage at the national and international levels expansion of research and improvements in the basic data relating to marriage and the family. Specifically, much greater use could be made of socio-demographic sample surveys to supplement census and vital registration sources in this area

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[22] A further suggestion of bias is provided in table IV.14 by the less distinctive declines between the under-15 and the 15 and over categories for males, for whom there were no direct survey design limitations on age.

[23] In particular, the dip in average sometimes found between low and medium incomes, in turn always followed by a rise between the medium and high categories, is difficult to explain.

Chapter V

FERTILITY

A. Introduction

Births are the demographic link between a population's past and the future. In any society their numbers and distribution are shaped by the size of preceding generations and their patterns of reproductive behaviour, though also by the context of current economic, social and political conditions. In succeeding decades, the new members of the population in their turn make up the school children, the labour force, the parents of generations to come, and ultimately the aged.

A common heritage of Europe is found in patterns of childbearing that are strikingly similar among the continent's various regions and countries. European societies (and their relatives overseas) appear, in fact, to have been forerunners in adopting new forms of reproductive behaviour which the rest of the world eventually follows. Throughout the continent, fertility has now declined to low levels and is subject to a high degree of control; in some countries births are hardly sufficient to ensure numerical replacement of the population. As chapter IV showed, very high proportions of women in Europe now marry typically at an early age, and most proceed to have families of one to three children. Yet the variations on these patterns within Europe today may in the long run be as significant as the similarities. Since mortality has now reached such a low level that almost every child born survives through the age of parenthood, and as, at the same time, international migration seems unlikely to bring about shifts of population on the scale known in the past, fertility is more than ever before the dynamic force of demographic change.

Levels and trends of fertility in post-war Europe are described and analysed in this chapter from several points of view. Most attention is given to demographic aspects of the fertility decline. Crude birth rates are the fundamental measure of fertility; an examination of total fertility rates and age-specific fertility rates reveals how crude rates are influenced by purely statistical factors such as the composition of the population by age and marital status. Changes in these two factors can be quantitatively assessed by breaking the crude birth rate down into component terms of which the third, marital fertility, is the essential phenomenon under discussion. Trends in marital fertility are further analysed in some detail on the basis first of distribution of births by birth order (parity), then of the numbers of births occurring to women born at specific dates (birth cohorts) or married at specific dates (marriage cohorts), and finally of expectations of future childbearing among married women now of reproductive age. The contribution of illegitimate births to fertility and the question of changes in the timing patterns of family formation are also considered.

This chapter takes up rather briefly the inter-relations of population structure with fertility and the topic of fertility control, including recent trends in abortion and contraception. Among many structural characteristics which have an impact on childbearing, a few have been selected for review: urban/rural residence, regional variation, women's education and their participation in the labour force.

Most of the material assembled for the purposes of this analysis is derived from official national and international sources. These fall into two categories: vital statistics (flow) and census (stock) data. Both kinds of information are highly developed in Europe today and can be relied upon as essentially accurate and complete for the vast majority of countries. Nevertheless, there is considerable variation in the detail available for individual countries, as well as in precise definitions and methods of tabulation. This gives rise to serious problems of coverage and/or comparability in some cases.

Supplementary sources have also been drawn upon, most notably the above-mentioned study by the secretariat of the ECE entitled *Fertility and Family Planning in Europe around 1970: A Comparative Study of 12 National Surveys* (referred to in this chapter as the Comparative Fertility Study). This study presents the results of a dozen national sample surveys inquiring into reproductive attitudes and practices among married women of childbearing age. The survey data provide a unique insight into certain important aspects of fertility behaviour, but the results must be interpreted with some caution. Not only were the questions included frequently highly subjective in nature and thus liable to a relatively high degree of variability in response, but each of the surveys was also conducted entirely independently with no forethought given to comparability with information collected in other countries. Extension and refinement of this kind of inquiry nevertheless offer great potential for increasing our understanding of fertility as a social phenomenon.

B. The impact of demographic factors on fertility trends

1. *Long-term perspective*

Before turning specifically to regional and national trends in the post-war period, it is worthwhile reviewing briefly the long-term evolution of fertility in Europe.

The past reproductive history of a population is relevant not only because it puts more recent behaviour in perspective but also because it is the primary determinant of current age structure; in this latter sense it has a secondary indirect effect on subsequent levels of fertility.

The broad outline of regional development in the twentieth century was discussed in terms of the crude birth rate in chapter II. But the most appropriate statistic for purposes of a survey of national populations over an extended period is completed family size, a measure of ultimate childbearing performance. Figure 7 shows estimates of the average number of live-born children per woman for cohorts born from as far back as 1841-1845 up to 1936-1940 in 20 countries of Europe and the USSR.[1] It thus gives an overview of fertility trends through about one century from approximately 1860 to 1960.

The dominant feature of figure 7 is unquestionably the over-all decline in completed family size. In almost all countries for which the data go back over any length of time, the average number of children born to earlier cohorts was well over four. In contrast, the most recent cohort for which completed fertility can be estimated with any certainty has generally borne from two to two and a half children per woman. The decline thus amounted everywhere to about 50 per cent; because of the universality of this feature, the major distinctions between regions and countries relate to the timing of the decline, the rate at which it progressed, and subsequent trends in those areas which achieved low levels of fertility at earlier points in time.

In most countries of northern Europe, the downward trend set in relatively early; successive cohorts of women born around the middle of the nineteenth century were already having fewer children than their predecessors. Preceding other regions, northern Europe also reached its low point there with the cohorts who were at the height of their childbearing in the late 1920s and the depression years of the 1930s. By this time the level throughout northern Europe was close to two children per woman and in the United Kingdom it was even lower. Subsequently, the average tended to rise somewhat and then, for the latest cohorts, frequently to fall again.

Although the documentation for western Europe is much less complete, the evidence for the more recent cohorts suggests a pattern similar to that of northern Europe. France is outstanding in that average family size was only a little over three children at the beginning of the period covered here, and the low point was achieved by women born as early as the turn of the century. In the Netherlands, on the other hand, fertility was distinctly higher than in the rest of western and northern Europe until very recently.

Completed family size began to decline in southern and eastern Europe significantly later, on the whole. In Italy and Spain the trend proceeded at about the same pace as in the North and West reaching low averages of about two and a half children per woman for cohorts passing through the height of their childbearing during and after the Second World War. The decline was particularly sharp in the eastern countries where it began the latest: Romania, Bulgaria and the USSR.[2] In eastern Europe as a whole, the figures give little indication so far of having reached a levelling off point, although in Hungary average completed family size has fallen below two. However, the history of recent cohorts in the German Democratic Republic and Czechoslovakia appears more like that of their neighbours to the West than that of the other countries of the region.

Putting these trends together, fertility in European countries can be seen to be converging at low to moderate levels as the present day is approached. The over-all conformity in average completed family size for the last cohorts which can be documented is indeed very striking. Furthermore, the extent of the decline is such that a very drastic alteration of circumstances would be required to cause a return to previous levels of childbearing. Future variations, although they have very significant implications in terms of long-term growth, will almost certainly involve relatively minor changes in completed cohort fertility. Nevertheless, some of the differences which are currently discernible reflect long-standing patterns, and, focusing now on families formed since the First World War, the diversity of national histories brought European countries into the post-Second World War period with quite variable pressures on annual fertility measures built into their age structure.

2. *Crude birth rate*

When it comes to the post-war period, it is no longer possible to base an analysis on completed cohort fertility, for, as the present is approached, a progressively greater proportion of the ultimate childbearing of successive cohorts remains unknown. Until recently, completed family size could hardly be ascertained until a cohort neared the end of its reproductive life. By this time its main contribution to fertility was already 10 to 15 years in the past. However, with increasing concentration of childbearing early in marriage, the problem has become somewhat less severe, and the cohort approach has gained in importance in assessing the long-term implications of current phenomena.

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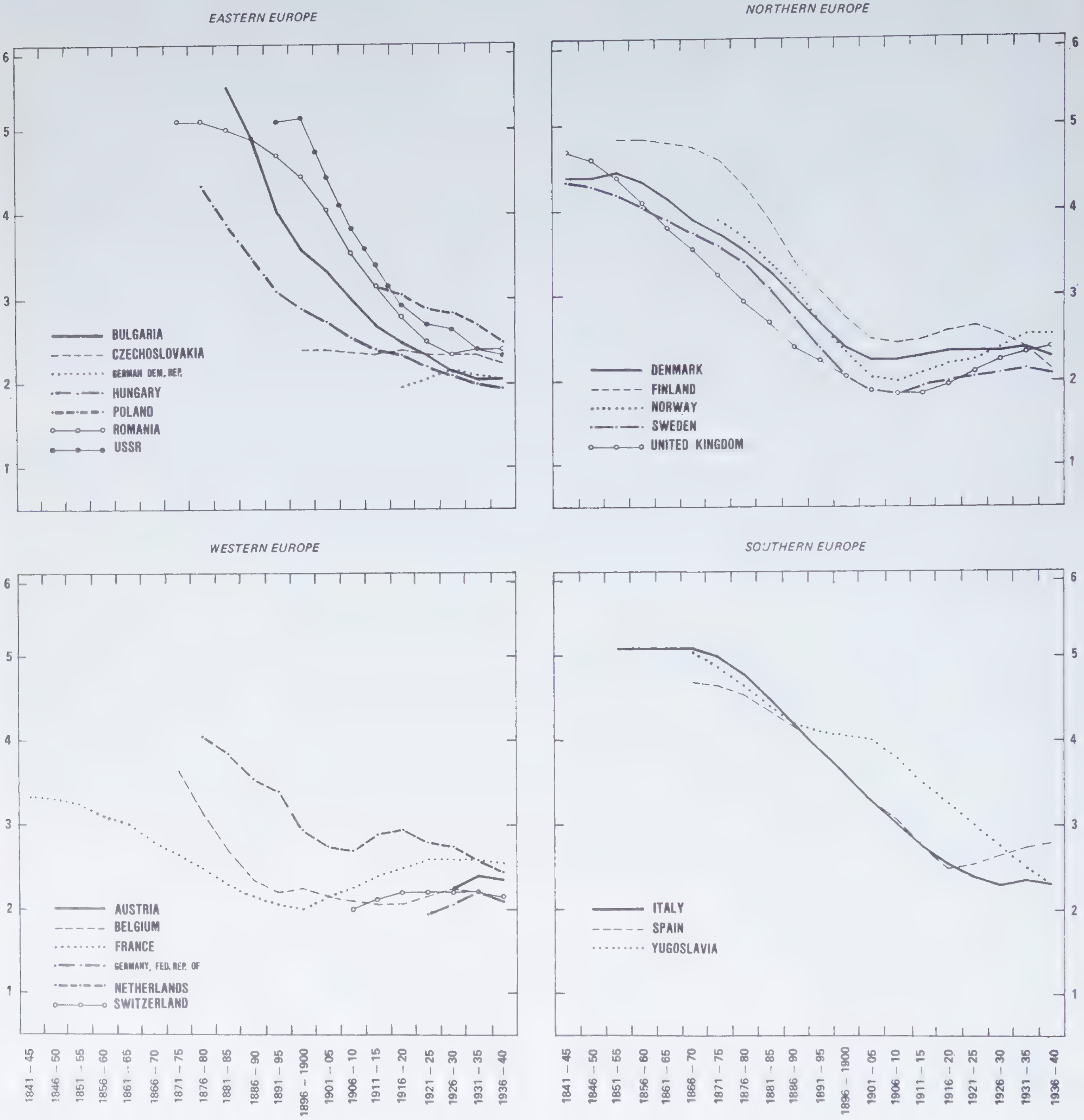
[1] The data underlying these estimates come from two quite different sources. Whenever possible, vital statistics, that is live births by age of mother, have been assembled to document the fertility history of each cohort. However, since the age classification given in the published statistics did not always correspond to the one needed, linear interpolation was required in some cases to redistribute the births by cohort. Census information on the number of children ever born to women classified by age was used in addition to supplement the vital statistics data and to extend the coverage of the series. The census data are subject to bias from various sources such as lapse of memory among older women and differential mortality. Thus the resulting series should be interpreted not in terms of precise quantitative values but rather as a broad picture of the development of fertility in the various countries of Europe.

[2] Throughout this chapter it should be kept in mind that the USSR represents an amalgamation of European and non-European populations, the latter often having a very different cultural orientation toward childbearing; because of its relatively high fertility, the non-European element is increasingly dominant in the national statistics.

FIGURE 7

Average number of live born children per woman for birth cohorts 1841-1845 to 1936-1940



EASTERN EUROPE

NORTHERN EUROPE

WESTERN EUROPE

SOUTHERN EUROPE

[a] Secretariat estimates based on official vital statistics and census data reported either in national publications or in scientific articles.

Nevertheless much of the emphasis inevitably shifts to period measures of fertility, that is statistics relating annual numbers of births to a more or less refined population base.[3] In the sections immediately following, the post-war trends in two of these measures, the crude birth rate and the total fertility rate, will be reviewed and compared. Because such period indicators are subject to a variety of influences at any given moment, they fluctuate far more rapidly than average completed family size, without necessarily implying any change in over-all fertility behaviour. However, they are usually available on an almost current basis and in times like the present when rapid changes appear to be taking place, the most up-to-date information is particularly relevant. Finally, it should be recognized that period measures have validity in their own right. Much of the public interest in fertility lies not so much in the long-term prospects for growth or declines as in its implications for the development of social services, employment and the like in the relatively near future. And, basic to all other considerations, current fertility rates are the essential component of annual changes in population size.

The historical series of crude birth rates for European countries by quinquennial periods going back to 1901-1905 are presented in appendix table A.V.1; annual rates from 1946 on are presented in table V.1 and in graphic form in figure 8 together with total fertility rates for the same period. In the chart, the two rates have been converted to logarithmic scale so that the relative change in each can be properly compared. Crude birth rates are also shown, together with crude death rates, in figure 1.

Crude birth rates in the first half of the twentieth century reflect primarily the long-term decline in fertility documented above. It is noteworthy, however, that the post-war upsurge in fertility, characteristic of northern and western Europe, produced crude birth rates that were no higher than those of the 1920s. Moreover, the widespread downward trend of the late 1960s and the 1970s has brought crude birth rates to unprecedentedly low levels, even in those countries where fertility was severely depressed in the 1930s.[4]

Focusing now on the post-war years, most countries experienced a brief spurt in the crude birth rate immediately after the war as a result of the making up of marriages and births postponed earlier on. Various patterns can be distinguished in the subsequent development of national birth rates. While these patterns follow regional geographic divisions to some extent, there are important variations to keep in mind.[5]

The countries of eastern Europe, together with the USSR and Yugoslavia, but excluding the German Democratic Republic, compose one group. These countries had birth rates ranging from about 25 to as high as 30 around 1950. There was some tendency for the rates to rise to a secondary peak in the early 1950s, but afterwards they declined steeply for about 15 years. Reductions in this period were of the order of one-third to one-half of the earlier rates and can be considered as a continuation of the long-term downward trend which started well before the war. In Hungary, where the birth rate was already lower than in other parts of eastern Europe, it dropped to the point of being the lowest in the continent during several years in the mid-1960s.

The downward movement in eastern Europe as a whole levelled off toward the end of the 1960s and trends became somewhat irregular, but on the whole rates tended to rise. Starting in Hungary as early as 1963 and then in Czechoslovakia and Poland, the upward shift in recent years is quite pronounced. Data for the early part of 1974 indicate that birth rates are continuing to rise in these countries, and indeed the trend may well be gathering strength in Czechoslovakia and Hungary. The final birth rate for Czechoslovakia in 1974 will probably be over 20. Recent developments in Romania are, of course, exceptional; the sudden restriction of abortion in 1967 caused the birth rate there virtually to double in one year. Since then, it has fallen rapidly to a level well within the range of the other countries in the region. Governmental intervention in the form of family allowances and employment policies, as well as regulation of contraception and abortion, have probably been influential in other eastern countries as well.

Outside of eastern Europe, countries differ mainly with respect to the level of their birth rate at the beginning of the period and the extent to which they participated in the baby boom of the late 1950s and early 1960s. Where the birth rate was as high as 19 or 20 around 1950, it tended to rise very little or not at all. Finland, Norway, France and Greece have experienced more or less regularly decreasing rates up to the present, most sharply in the case of Finland, where the rate was especially high to begin with. Decline in the Netherlands and Portugal was interrupted only by a temporary plateau during the period in question, and in Spain a rise is just discernible. On the other hand, where fertility had previously reached low levels, the upswing tended to be much more pronounced. Sweden, England and Wales, Austria and the Federal Republic of Germany all experienced increases

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[3] The following definition of period data as distinguished from cohort data is given in H. S. Shryock and J. S. Siegel, *The Methods and Materials of Demography* (Washington, D.C., United States Department of Commerce, Bureau of the Census, 1971), vol. II, p. 712: "Period data relate to a type of demographic event which occurred over a great number of years (i.e. involving many cohorts) but which is observed during a specified brief period of time (usually one year). ... Period data provide a current annual "picture" with respect to the event or characteristic under consideration by age (period since birth) or duration (period since the event), whereas cohort data provide a "lifetime picture" for a cohort or a time series of cohorts with respect to the relevant variable."

[4] The long-term development of the crude birth rate has been analysed in a number of earlier studies, notably: D. Kirk, *Europe's Population in the Inter-war Years* (Geneva, League of Nations, 1946); *Recent Trends in Fertility in Industrialized Countries*, Population Studies, No. 27 (United Nations publication, Sales No. 57.XIII.2).

[5] Comparative studies of fertility in Europe in the post-war period include: J. Berent, "Causes of Fertility Decline in Eastern Europe and the Soviet Union", *Population Studies*, vol. XXIV, Nos. 1 and 2; P. Festy, "Evolution de la fécondité en Europe occidentale depuis la guerre", *Population*, XXV, March-April 1970; D. V. Glass, "Fertility trends in Europe since the second world war", *Population Studies* (London), vol. 22, No. 1, March 1968; L. Tabah, *Rapport sur les relations entre la fécondité et la condition sociale et économique de la famille en Europe* (Strasbourg), Council of Europe, 1971, tome III.

TABLE V.1

Crude birth rates, 1946-1974[a]

(Annual number of births per 1,000 population)

Region and country	*1946*	*1947*	*1948*	*1949*	*1950*	*1951*	*1952*	*1953*	*1954*	*1955*	*1956*	*1957*	*1958*	*1959*
Eastern Europe														
Bulgaria	25.6	24.0	24.6	24.7	25.2	21.1	21.2	20.9	20.2	20.1	19.5	18.4	17.9	17.6
Czechoslovakia	22.7	24.2	23.4	22.4	23.3	22.8	22.2	21.2	20.6	20.3	19.8	18.9	17.4	16.0
German Democratic Republic	10.7	13.3	13.0	14.8	16.9	17.4	17.1	16.8	16.6	16.7	16.2	15.9	15.9	17.1
Hungary	18.7	20.6	21.0	20.6	20.9	20.2	19.6	21.6	23.0	21.4	19.5	17.0	16.0	15.2
Poland	26.2	28.7	29.4	29.7	30.7	31.0	30.2	29.7	29.1	29.1	28.1	27.6	26.3	24.7
Romania	24.8	23.4	23.9	27.6	26.2	25.1	24.8	23.8	24.8	25.6	24.2	22.9	21.6	20.2
Northern Europe														
Denmark	23.4	22.1	20.3	18.9	18.7	17.8	17.8	17.9	17.3	17.3	17.2	16.8	16.5	16.3
Finland	27.9	28.0	27.6	26.1	24.5	23.0	23.0	22.0	21.5	21.2	20.8	20.1	18.6	18.9
Iceland	26.1	27.6	27.8	27.8	28.7	27.5	27.6	28.2	27.8	28.6	28.6	28.7	27.5	28.1
Ireland	23.0	23.2	22.1	21.5	21.3	21.2	21.9	21.2	21.3	21.1	21.0	21.2	20.9	21.1
Norway	22.6	21.4	20.5	19.5	19.1	18.4	18.8	18.7	18.5	18.5	18.5	18.1	17.9	17.7
Sweden	19.7	18.9	18.4	17.4	15.6	15.5	15.4	14.6	14.8	14.8	14.6	14.2	13.1	14.1
United Kingdom	19.4	20.7	18.1	17.0	16.3	15.8	15.7	15.9	15.7	15.5	16.1	16.6	16.9	16.9
England and Wales	..	..	..	..	15.9	15.5	15.3	15.5	15.2	15.0	15.7	16.1	16.4	16.5
Northern Ireland	..	..	..	..	21.0	20.7	20.9	20.9	20.8	20.8	21.1	21.5	21.6	21.9
Scotland	..	..	..	..	18.0	17.8	17.7	17.8	18.1	18.1	18.6	19.1	19.4	19.2
Western Europe														
Austria	15.9	18.6	17.7	16.3	15.6	14.8	14.9	14.8	15.0	15.6	16.7	17.0	17.1	17.7
Belgium	18.3	17.8	17.6	17.2	16.9	16.4	16.7	16.6	16.8	16.8	16.8	17.0	17.1	17.4
France	20.9	21.3	21.1	20.9	20.5	19.5	19.3	18.7	18.7	18.5	18.3	18.3	18.1	18.2
Germany, Federal Republic of	16.5	16.7	16.8	17.1	16.5	16.0	16.0	15.8	16.1	16.0	16.5	17.0	17.0	17.7
Luxembourg	14.8	14.4	14.2	13.7	13.9	14.0	15.1	15.1	15.5	15.3	15.7	16.0	15.9	16.1
Netherlands	30.2	27.8	25.3	23.7	22.7	22.3	22.3	21.7	21.5	21.3	21.3	21.2	21.2	21.4
Switzerland	20.0	19.4	19.2	18.4	18.1	17.2	17.4	17.0	17.0	17.1	17.4	17.7	17.6	17.7
Southern Europe														
Albania	..	..	..	..	38.9	38.5	35.2	40.9	40.8	44.5	41.9	39.1	41.8	41.9
Greece	28.0	27.2	26.8	18.6	20.0	20.3	19.3	18.4	19.2	19.4	19.7	19.3	19.0	19.4
Italy	23.0	22.2	21.9	20.3	19.5	18.3	17.9	17.7	18.2	18.0	18.0	18.0	17.7	18.3
Malta	36.3	38.2	36.0	34.0	32.9	30.4	29.3	28.3	28.1	27.2	26.8	27.6	26.3	26.2
Portugal	25.4	24.5	26.7	25.5	24.3	24.6	24.9	23.7	23.0	24.4	23.4	24.4	24.3	24.3
Spain	21.6	21.5	23.3	21.7	20.2	20.1	20.8	20.5	20.0	20.5	20.7	21.8	21.8	21.7
Yugoslavia	..	26.6	28.1	30.0	30.2	27.0	29.7	28.4	28.6	26.9	26.0	23.9	24.0	23.4
USSR	..	..	..	..	26.7	27.0	26.5	25.1	26.6	25.7	25.2	25.4	25.3	25.0

Region and country	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1973 Jan.-June	1974 Jan.-June
Eastern Europe																
Bulgaria	17.8	17.4	16.7	16.4	16.1	15.3	14.9	15.0	16.9	17.0	16.3	15.9	15.3	16.2	. .	. .
Czechoslovakia	15.9	15.8	15.7	16.9	17.2	16.4	15.6	15.1	14.9	15.5	15.9	16.5	17.3	18.8	19.2	20.8
German Democratic Republic	17.2	17.7	17.5	17.6	17.2	16.5	15.7	14.8	14.3	14.0	13.9	13.8	11.8	10.6	11.1	11.0
Hungary	14.7	14.0	12.9	13.1	13.1	13.1	13.6	14.6	15.1	15.0	14.7	14.5	14.7	15.0	15.1	16.8
Poland	22.6	20.9	19.8	19.2	18.1	17.4	16.7	16.3	16.2	16.3	16.6	17.2	17.4	17.9	18.6	19.1
Romania	19.1	17.5	16.2	15.7	15.2	14.6	14.3	27.4	26.7	23.3	21.1	19.5	18.8	18.2	. .	. .
Northern Europe																
Denmark	16.6	16.6	16.7	17.6	17.7	18.0	18.4	16.8	15.3	14.6	14.4	15.2	15.2	14.3	. .	. .
Finland	18.5	18.4	18.1	18.1	17.6	16.9	16.7	16.6	15.9	14.6	14.0	13.2	12.8	12.2	12.1	13.2
Iceland	28.0	25.5	25.9	26.0	25.3	24.5	24.0	22.2	21.0	20.8	19.7	20.8	21.9	21.5	. .	. .
Ireland	21.4	21.2	21.8	22.2	22.3	22.1	21.6	21.1	21.0	21.5	21.9	22.7	22.4	22.5	23.0	22.8
Norway	17.3	17.3	17.1	17.3	17.7	17.8	17.9	17.6	17.6	17.6	16.6	16.8	16.3	15.5	16.4	15.9
Sweden	13.7	13.9	14.2	14.9	16.0	15.9	15.8	15.4	14.3	13.5	13.7	14.1	13.8	13.5	14.3	14.3
United Kingdom	17.5	17.9	18.3	18.5	18.8	18.4	17.9	17.5	17.2	16.6	16.3	16.2	14.9	13.9	14.7	13.6
England and Wales	17.1	17.6	18.0	18.2	18.6	18.2	17.8	17.3	16.9	16.4	16.1	16.0	14.8	13.8	14.3	13.3
Northern Ireland	22.5	22.4	22.7	23.1	23.6	23.1	22.5	22.4	22.1	21.4	21.1	20.7	19.4	18.7	19.5	18.5
Scotland	19.6	19.5	20.1	19.7	20.0	19.3	18.6	18.5	18.2	17.3	16.8	16.6	15.1	14.3	14.7	13.3
Western Europe																
Austria	17.9	18.6	18.7	18.8	18.5	17.9	17.6	17.4	17.2	16.5	15.2	14.6	13.9	12.9	13.2	13.0
Belgium	16.9	17.3	16.8	17.1	17.2	16.4	15.9	15.3	14.7	14.6	14.6	14.4	13.8	13.3	13.9	13.0
France	17.9	18.1	17.6	18.1	18.1	17.7	17.5	16.9	16.7	16.7	16.7	17.1	17.0	16.5	17.2	15.5
Germany, Federal Republic of	17.8	18.3	18.2	18.5	18.5	17.9	17.8	17.2	16.1	14.8	13.4	12.7	11.3	10.3	10.5	10.2
Luxembourg	16.0	16.1	16.0	15.8	16.0	16.0	15.5	14.8	14.0	13.3	13.0	13.0	11.8	10.9	11.5	10.8
Netherlands	20.8	21.3	20.9	20.9	20.7	19.9	19.2	18.9	18.6	19.2	18.3	17.2	16.1	14.5	15.6	14.3
Switzerland	17.6	18.1	18.4	19.1	19.2	18.8	18.3	17.7	17.1	16.5	15.8	15.2	14.3	13.6	13.7	13.9
Southern Europe																
Albania	43.4	41.2	39.3	39.1	37.8	35.2	34.0	35.3	35.6	35.3	32.5	33.3	. .	30.4	. .	. .
Greece	18.9	17.9	18.0	17.5	18.0	17.7	17.9	18.7	18.2	17.4	16.5	15.9	15.7	15.3	15.9	16.5
Italy	18.3	18.6	18.7	19.0	19.9	19.6	19.1	18.3	17.3	17.5	16.8	16.8	16.3	16.0	16.3	15.7
Malta	26.1	23.3	22.8	20.3	19.8	17.6	16.8	16.7	16.1	15.8	16.3	17.1	16.9	17.1	16.6	16.3
Portugal	24.1	24.4	24.4	23.4	23.8	22.8	22.2	21.5	21.4	21.0	19.3	21.3	20.3	20.1	20.0	19.2
Spain	21.8	21.3	21.3	21.5	22.2	21.3	20.9	21.0	20.2	20.0	19.5	19.6	19.4	19.2	19.6	19.2
Yugoslavia	23.5	22.7	21.9	21.4	20.8	21.0	20.4	19.6	19.1	18.9	17.8	18.3	18.2	18.0	18.0	17.6
USSR	24.9	23.8	22.4	21.1	19.5	18.4	18.2	17.3	17.2	17.0	17.4	17.8	17.8	17.6	. .	. .

Sources: For all tables in chapter V, unless otherwise stated: United Nations, *Demographic Yearbook*, various years; official national sources.

[a] Irregularities in the series around 1970 may be due to the introduction of population estimates based on the 1970 round of censuses.

of at least 15 per cent in the crude birth rate and Denmark, Scotland, Switzerland and Italy only a little less. The start of this rise varied somewhat in time, but it reached its height almost everywhere in 1964, at levels usually below 20.

A few countries are set apart from any group. Fertility in the German Democratic Republic was very much affected in the early years by the dislocation of the war. Since 1955 the country's birth rate has evolved in a manner similar to that of its western neighbours, although it has been consistently low. Ireland has a fertility history quite distinct from other countries which is reflected in the post-war period by a moderately high crude birth rate with no real trend in either direction. The statistics for Albania are of uncertain quality compared with other European countries, and the Albanian birth rate gives signs at most of having entered the initial stages of fertility decline.

The decade since 1964 has brought a resumption and even an acceleration of the long-term decline in crude birth rates. The movement is most accentuated in the heartland of Europe. In the German Democratic Republic and the Federal Republic of Germany the crude birth rate dropped approximately 40 per cent between 1964 and 1973; it was then only marginally over 10 per thousand in both countries and appears to have gone down further in 1974. Substantial reductions are quite general throughout the rest of northern and western Europe and have occurred also in Italy and Greece, but on the whole southern Europe has been much less affected. In Portugal and Spain, the crude birth rate dropped just 15 per cent during the decade and is still in the neighbourhood of 20. Norway and France currently have birth rates only just over 15 but these are also the result of relatively minor changes in the last 10 years. Outside of eastern Europe, the only countries for which the early 1974 data suggest anything other than continued decline are Finland and possibly Greece.

As recently as 1968, the conclusion might well have been drawn that crude birth rates in Europe were converging at a low level. While the differences may still appear small in the perspective of the world as a whole and even in the light of the demographic history of Europe in the twentieth century, the picture seems now to be less clear. Birth rates are clearly moving upward and may well reach 20 in several eastern countries. At the other extreme, rapid declines are occurring in parts of western Europe, carrying the rates possibly to 10 per thousand or even below. In the following sections an attempt will be made to evaluate the extent to which these trends are due to the temporary distortion of the crude birth rate by purely statistical factors as opposed to significant change with implications for the long run.

3. *Total fertility*

One such statistical factor is the age and sex structure of the population. Even if the probabilities of women bearing children remain the same at each age, the crude birth rate will move up or down (*a*) if the proportion female in the total population changes; (*b*) if the proportion of all females who are in the childbearing years changes; or (*c*) if the numbers of women in the ages of high fertility change relative to those in the ages of low fertility. The effect of age and sex structure is eliminated from the total fertility rate;[6] hence it focuses on actual childbearing performance more directly. In addition to their graphic presentation in figure 8, total fertility rates for European countries from 1946 on are assembled in table V.2.

Many countries of Europe have age and sex compositions which bear the mark of their past fertility history, as well as of migration trends and historical events such as the war. Of the two compositional factors, age structure is almost always more important than the sex ratio. The comparison of the two rates in figure 8 immediately makes it clear, however, that the total fertility rate tells fundamentally the same story as the crude birth rate. Total fertility has varied from nearly four children per woman, recorded at various times in Poland, Romania, Ireland, the Netherlands and Yugoslavia, to implied completed families of less than two children per woman in the German Democratic Republic, Hungary, Finland, Sweden, Austria and the Federal Republic of Germany, primarily in the 1970s. Its evolution parallel to the crude birth rate is very striking everywhere, and it is safe to assert immediately that neither age nor sex structure has been a primary determinant of the post-war fertility history of Europe. This point is elaborated in more detail below in sub-section 5 on the components of crude birth rates. Nevertheless, the total fertility rate brings out a number of significant developments.

Within the general picture of post-war fertility decline, there is a widespread tendency for the total fertility rate to move downward less rapidly (sometimes upward more rapidly) than the crude birth rate for a period of some years, and for the situation later to reverse itself. In France, for instance, the crude birth rate declined 18 per cent from 1950 to 1964 and another 9 per cent from 1964 to 1972, while the total fertility rate dropped only 1 per cent in the earlier period and as much as 17 per cent after that. Age structure was unfavourable to fertility for a time after the war in countries which had experienced a trough in fertility from the late 1920s through the 1930s reflecting the passing of smaller cohorts through the ages of childbearing. Subsequently, cohorts of potential parents became larger, and now the post-war babies are reaching maturity, which will put upward pressure on the birth rate regardless of the trend in total fertility. This is already visible in countries like the Netherlands

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[6] The total fertility rate is the sum of the age-specific rates. In actual practice, it is usually computed on the basis of age-specific rates for five-year groups from ages 15 to 49. Essentially, it is a standardization procedure giving equal weight to each age, i.e. assuming a flat age distribution unaffected by mortality and migration. The total fertility rate thus represents the number of children a woman would have if she proceeded through her reproductive life bearing children year by year and age by age at the rates recorded for women of each age in one specific calendar year. Although it is in one sense analogous to completed family size, its implications are quite different. Age-specific rates are sharply affected by short-term changes in nuptiality or the timing of births which are reflected in turn in the total fertility rate; in this sense it is truly a period measure. Such influences have far less impact over the whole reproductive span in the life of any actual cohort of women.

Table V.2

Total fertility rates, 1946-1973 [a] [b]

(*Average births per woman*)

Region and country	*1946*	*1947*	*1948*	*1949*	*1950*	*1951*	*1952*	*1953*	*1954*	*1955*	*1956*	*1957*	*1958*	*1959*
Eastern Europe														
Bulgaria	3.06	2.84	2.87	2.86	2.94	2.45	2.44	2.41	2.35	2.41	2.36	2.26	2.23	2.23
Czechoslovakia	..	3.10	3.00	2.89	3.04	3.02	2.97	2.87	2.83	2.85	2.84	2.75	2.57	2.39
German Democratic Republic	..	1.69	1.64	1.93	2.30	2.41	2.40	2.37	2.35	2.35	2.26	2.21	2.20	2.35
Hungary	2.30	2.54	2.58	2.54	2.60	2.53	2.47	2.76	2.97	2.81	2.60	2.30	2.18	2.09
Poland	..	..	..	..	3.71	3.75	3.67	3.61	3.58	3.61	3.51	3.49	3.36	3.22
Romania[c]	..	..	2.89	3.34	3.17	3.03	3.00	2.88	3.00	3.09	2.89	2.73	2.59	2.43
Northern Europe														
Denmark	3.02	2.90	2.71	2.58	2.58	2.50	2.54	2.60	2.54	2.58	2.59	2.56	2.54	2.49
Finland	3.41	3.47	3.47	3.33	3.16	3.01	3.06	2.96	2.93	2.93	2.91	2.86	2.68	2.75
Ireland	..	..	..	..	..	..	..	..	..	3.39	3.41	3.60	3.52	3.62
Norway	2.77	2.66	2.60	2.52	2.52	2.48	2.61	2.66	2.70	2.79	2.86	2.86	2.89	2.91
Sweden	2.57	2.50	2.47	2.39	2.30	2.22	2.24	2.27	2.19	2.25	2.29	2.28	2.26	2.25
United Kingdom:														
England and Wales	2.47	2.70	2.39	2.26	2.19	2.15	2.16	2.22	2.21	2.22	2.36	2.45	2.52	2.54
Scotland	2.76	2.91	2.59	2.49	2.43	2.40	2.40	2.43	2.49	2.53	2.63	2.73	2.78	2.78
Western Europe														
Austria	..	..	..	..	..	2.06	2.06	2.07	2.11	2.23	2.41	2.49	2.52	2.61
Belgium	2.52	2.46	2.44	2.38	2.34	2.29	2.33	2.33	2.37	2.38	2.40	2.45	2.50	2.57
France	2.98	3.02	3.00	3.00	2.93	2.79	2.76	2.69	2.70	2.67	2.66	2.68	2.68	2.74
Germany, Federal Republic of	..	..	..	2.15	2.10	2.06	2.09	2.08	2.13	2.14	2.23	2.33	2.32	2.40
Netherlands	3.97	3.70	3.41	3.22	3.09	3.05	3.08	3.03	3.03	3.03	3.05	3.08	3.10	3.17
Switzerland	2.62	2.56	2.54	2.44	2.40	2.30	2.32	2.29	2.28	2.30	2.35	2.41	2.40	2.42
Southern Europe														
Greece[c]	..	..	..	..	..	..	..	..	..	..	2.31	2.25	2.21	2.25
Italy	3.01	2.89	2.83	2.62	2.49	2.35	2.29	2.25	2.32	2.31	2.30	2.31	2.28	2.35
Malta	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Portugal[c]	3.16	3.11	3.42	3.17	3.04	3.14	3.13	3.04	2.90	2.91	2.92	2.87	3.02	3.10
Spain	2.68	2.64	2.86	2.65	2.46	2.45	2.54	2.53	2.48	2.56	2.59	2.75	2.78	2.77
Yugoslavia	..	..	..	..	3.74	3.29	3.60	3.38	3.36	3.16	3.02	2.76	2.77	2.74
USSR	..	..	..	..	2.88	2.92	2.87	2.73	2.97	2.87	2.82	2.84	2.83	2.81

TABLE V.2 (*continued*)

Total fertility rates, 1946-1973 [a,b]

(*Average births per woman*)

Region and country	*1960*	*1961*	*1962*	*1963*	*1964*	*1965*	*1966*	*1967*	*1968*	*1969*	*1970*	*1971*	*1972*	*1973*
Eastern Europe														
Bulgaria	2.30	2.28	2.22	2.19	2.16	2.08	2.02	2.03	2.28	2.28	2.18	2.11	2.04	..
Czechoslovakia	2.39	2.38	2.34	2.50	2.51	2.37	2.22	2.09	2.01	2.05	2.07	2.14	2.23[c]	..
German Democratic Republic	2.33	2.40	2.41	2.47	2.51	2.48	2.42	2.34	2.30	2.24	2.19	2.13	1.79	1.58
Hungary	2.02	1.94	1.79	1.81	1.82	1.82	1.89	2.01	2.06	2.03	1.97	1.92	1.93	1.95
Poland	2.98	2.83	2.72	2.70	2.59	2.52	2.43	2.33	2.24	2.20	2.20	2.25	2.24	2.26
Romania[c]	2.34	2.17	2.04	2.01	1.96	1.91	1.90	3.66	3.63	3.19	2.89	2.66	2.55	2.44
Northern Europe														
Denmark	2.54	2.55	2.54	2.64	2.60	2.61	2.62	2.35	2.12	2.00	1.95	2.04	..	..
Finland	2.71	2.69	2.64	2.64	2.53	2.40	2.32	2.24	2.07	1.93	1.83	..	..	..
Ireland	3.73	3.79	3.90	3.93	4.08	4.06	3.95	3.84	3.77	3.84	3.84[c]	..	..	..
Norway	2.88	2.91	2.89	2.91	2.96	2.93	2.89	2.80	2.75	2.70	2.51	2.49	2.39	..
Sweden	2.20	2.23	2.25	2.34	2.48	2.42	2.36	2.28	2.27	1.94	1.94	1.98	1.93	..
United Kingdom:														
England and Wales	2.67	2.76	2.83	2.85	2.89	2.81	2.74	2.63	2.55	2.45	2.38	2.40	2.20	..
Scotland	2.88	2.91	3.01	3.01	3.07	2.98	2.88	2.85	2.78	2.62	2.51	2.46	2.27	..
Western Europe														
Austria	2.69	2.79	2.80	2.81	2.77	2.68	2.66	2.63	2.59	2.50	2.32	2.23	2.14	1.93
Belgium	2.56	2.62	2.59	2.68	2.71	2.61	2.52	2.42	2.31	2.25	2.25	2.18[c]	2.09[c]	..
France	2.73	2.81	2.78	2.88	2.90	2.84	2.79	2.66	2.58	2.52	2.47	2.48[c]	2.42[c]	..
Germany, Federal Republic of	2.37	2.46	2.44	2.52	2.55	2.51	2.54	2.49	2.39	2.22	2.02	1.92	1.71	..
Netherlands	3.12	3.20	3.17	3.19	3.17	3.04	2.90	2.79	2.69	2.80	2.58	2.38	2.17	..
Switzerland	2.44	2.53	2.59	2.67	2.68	2.61	2.52	2.41	2.30	2.19	2.09	2.02	..	..
(Southern Europe														
Greece[c]	2.20	2.13	2.16	2.13	2.24	2.23	2.29	2.40	2.40	..	2.21	..	..	..
Italy	2.37	2.41	2.43	2.49	2.62	2.66	2.61	2.51	2.46	2.47	2.40	2.37	..	..
Malta	..	..	..	..	2.79	2.47	2.28	2.24	2.12	2.02	2.02	2.06	2.01	..
Portugal[c]	3.18	2.87	3.18	3.12	3.08	3.03	2.95	2.93	2.85	2.75	2.69	2.70	..	..
Spain	2.79	2.77	2.80	2.87	3.00	2.92	2.90	2.95	2.88	2.87	2.84	..	..	..
Yugoslavia	2.80	2.73	2.68	2.66	2.64	2.71	2.65	2.56	2.48	2.44	2.28	2.37	2.35	..
USSR	2.84	2.76	2.65	2.59	2.50	2.46	2.50	2.40	2.39	2.37	2.43	2.44	2.47	..

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[a] For information relating to the underlying age-specific rates, see foot-notes to appendix table A.V.2.

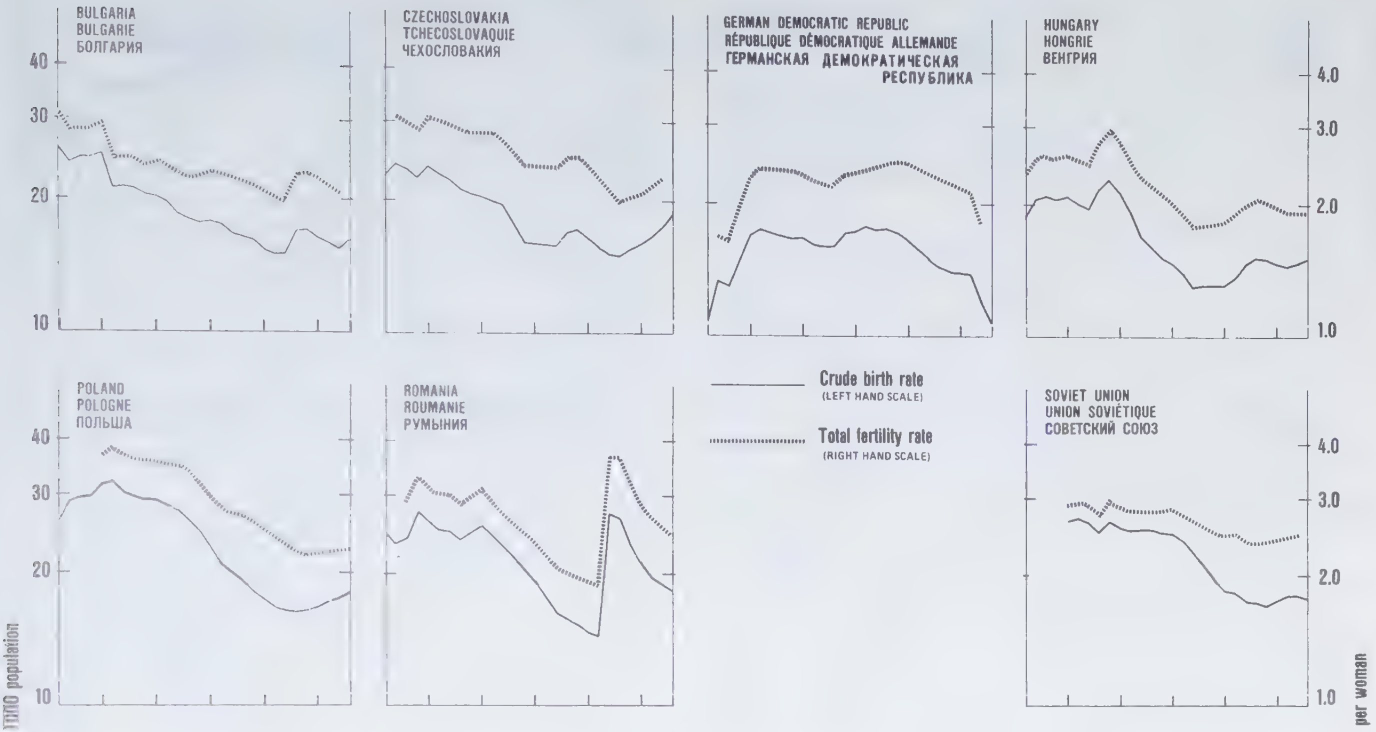
[b] Irregularities in the series around 1970 may be due to the introduction of population estimates based on the 1970 round of censuses.

[c] Estimate by the ECE secretariat.

FIGURE 8

Crude birth rates and total fertility rates, 1946-1973

EASTERN EUROPE



NORTHERN EUROPE

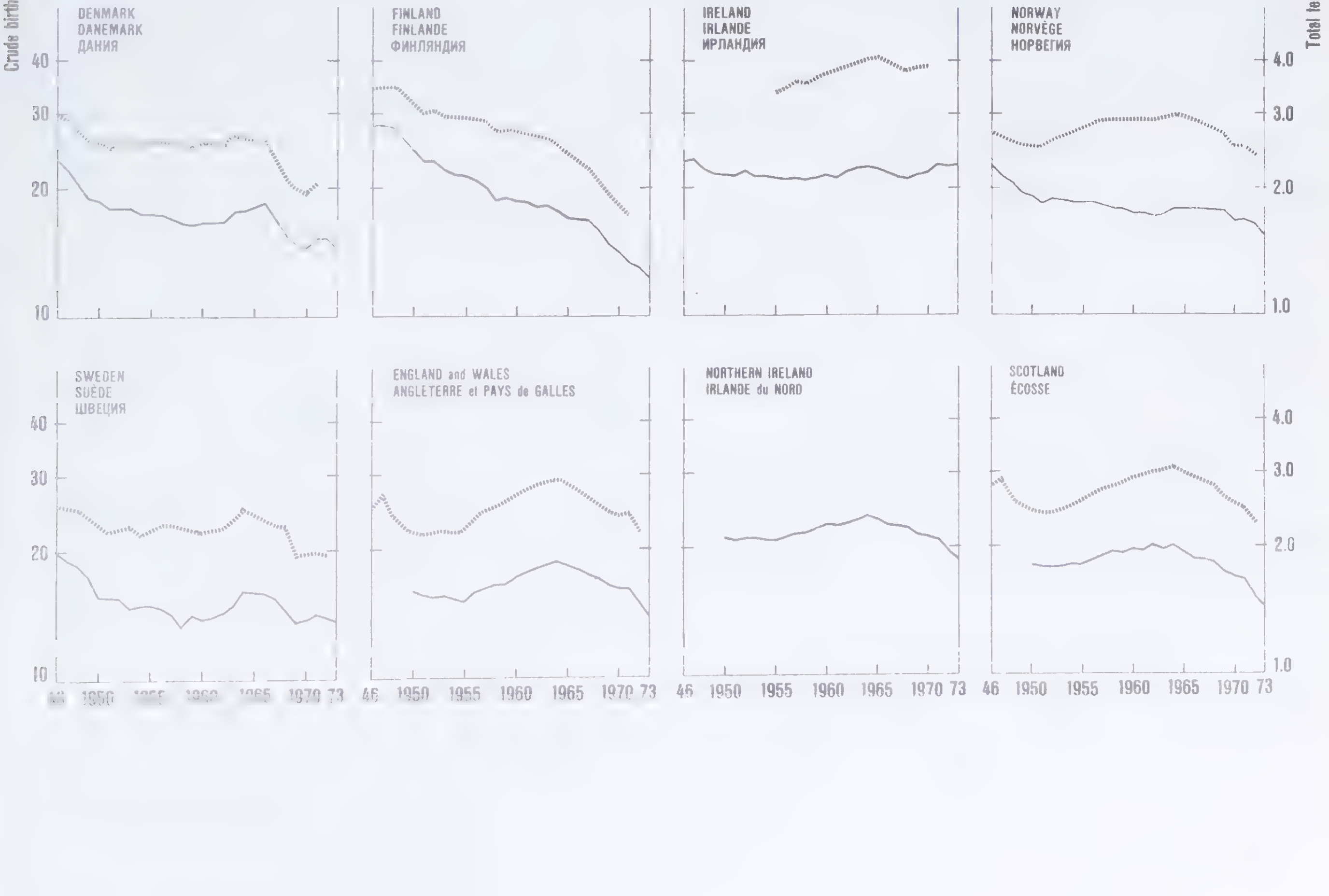
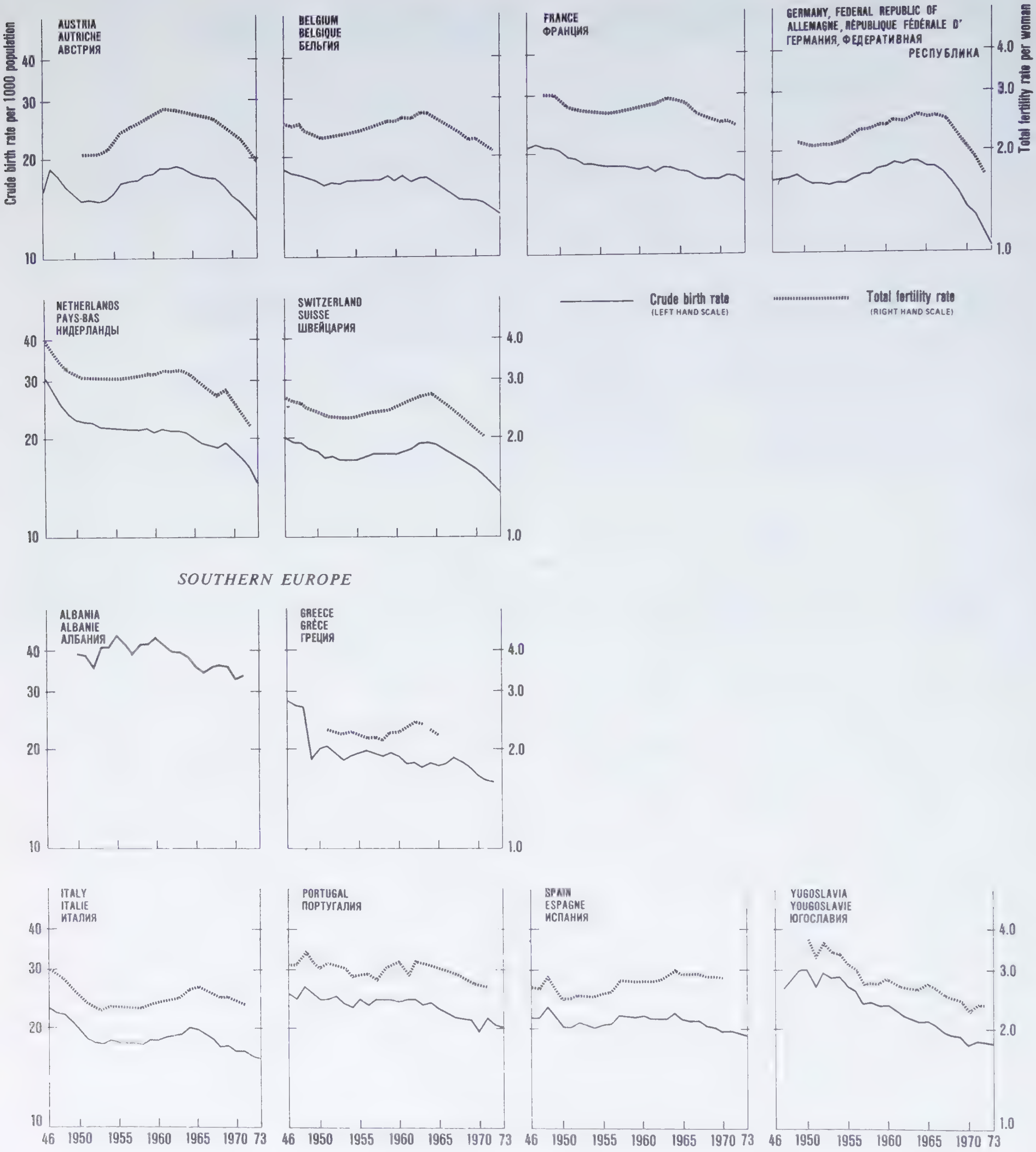


FIGURE 8 (*continued*)

Crude birth rates and total fertility rates, 1946-1973

WESTERN EUROPE



where the total fertility rate dropped 16 per cent between 1970 and 1972 but the crude birth rate went down only 12 per cent. Total fertility rates well below 2.1 now characteristic of several countries in northern and western Europe indicate that current levels of childbearing would actually be insufficient to ensure reproduction of the population if they continued for an extended period.

The baby boom is consequently accentuated in the total fertility rate in some countries and virtually disappears in others. In Denmark and Sweden the rising birth rates of the early 1960s can be said to be a statistical mirage as the probability of a woman bearing a child changed very little until the abrupt declines of the late 1960s. In Norway, France and the Netherlands, on the other hand, probabilities of childbearing increased noticeably, despite the steadily declining birth rates, and in this sense these countries actually did participate in the upsurge of fertility that was in progress elsewhere. Total fertility also rose in Ireland up to 1965, although its level there was already unusually high; continuous emigration has kept the crude birth rate low by comparison.

Total fertility has declined parallel to or less than the crude birth rate continuously through the post-war years in southern Europe, Bulgaria and Romania. In Italy and Spain structural factors have provided some downward pressure on the birth rate since the mid-1960s, while total fertility has remained high. The total fertility rate jumped in Romania in 1968 very much in proportion to the crude birth rate, indicating, as one would expect, that this particular phenomenon affected the probabilities of childbearing directly.

The Second World War played a prominent role in the subsequent fertility history of the German Democratic Republic, Poland and the USSR. Heavy war losses led not only to troughs in the age distribution but also to sex imbalances. On the one hand, the preponderance of women in the population tended to elevate the birth rate, but, on the other, the dearth of young adult males meant that many women were unable to marry. Moreover, fertility had previously reached a low ebb during rather than before the war years. In the USSR, total fertility remained just under 3.0 up to 1960 and then declined moderately to about 2.4, while the crude birth rate was above 25 in the early period and declined very rapidly after 1960 under the influence of negative changes in the age distribution. Similarly, both rates moved together in Poland up to 1961 at which point the crude birth rate entered a period of much more rapid decline. The total fertility rate has again risen slightly in both countries since 1969. A heavy flow of emigration further complicated the situation in the German Democratic Republic. As a net result, total fertility recovered quickly after the war and maintained a level between 2.25 and 2.50 to 1964 while the crude birth rate never exceeded 18.0. Since 1964, total fertility has dropped by a quarter, and although this represents a smaller decline than occurred in the crude birth rate in the same period, it is evident that fertility in the German Democratic Republic is now well below replacement levels, as it is in several surrounding countries.

4. *Age-specific fertility*

The total fertility rate is valuable as a summary measure of childbearing among women of reproductive age in any given year, but it is also useful to consider how women at each age contribute to the over-all total. Regardless of how total fertility has changed in Europe in the post-war period, the age curve of fertility has narrowed everywhere and the peak age has usually shifted downward towards the early twenties. Age-specific rates for the major countries of each region, illustrative of a variety of patterns, are shown in figure 9; the complete data by country are given in appendix table A.V.2.

Women below age 20 have not played a major role in childbearing, but fertility rates for this age group have risen over the post-war period as a whole in most countries, and their contribution to total fertility has typically nearly doubled. Teen-age fertility was already relatively high in eastern Europe (except Poland) and in Yugoslavia in the early post-war period; the rates have increased since then to the point where they account for 10 to 15 per cent of total fertility in these countries. Births to women less than 20 years old are now equally important, however, in Austria and the Federal Republic of Germany (where total fertility is extremely low) and also in England and Wales. Childbearing at the youngest ages has always been insignificant in Ireland and Spain.

If gains for the youngest age-group have not had very great over-all impact, the situation is the contrary for women aged 20-24. In 1950, births to women in their early twenties accounted for about one-third of total fertility in eastern Europe and one-quarter elsewhere, except in Ireland, the Netherlands and Spain where it represented as little as 15 per cent. The share of the 20-24 age group is now well over 40 per cent in several countries of eastern Europe and very close to one-third throughout northern and western Europe. Despite substantial gains, it is still considerably lower, however, in Ireland, the Netherlands, Italy and Spain. The major part of the change took place before about 1965, and this age group has shared in over-all trends more equally with others since then. Thus the early twenties have come to be the peak ages of childbearing, not only in eastern Europe but also in areas of northern and western Europe. Nevertheless, in some countries where over-all fertility declined rapidly, such as Bulgaria and Finland, the rates themselves may actually have decreased rather than have risen.

Variation in the fertility rates for women below age 25 is very largely a function of age at first marriage but also to some extent of the pace of childbearing within marriage. The latter topic will be taken up at a later point in this chapter. Trends in age at marriage were treated in chapter IV, and their close relationship with the phenomena observed here is readily apparent.[7] Age at marriage was already low in eastern Europe after the war, and it fell even further in the next decade; the fertility rates for younger women, which were high to begin with, failed to decline with those for older women.

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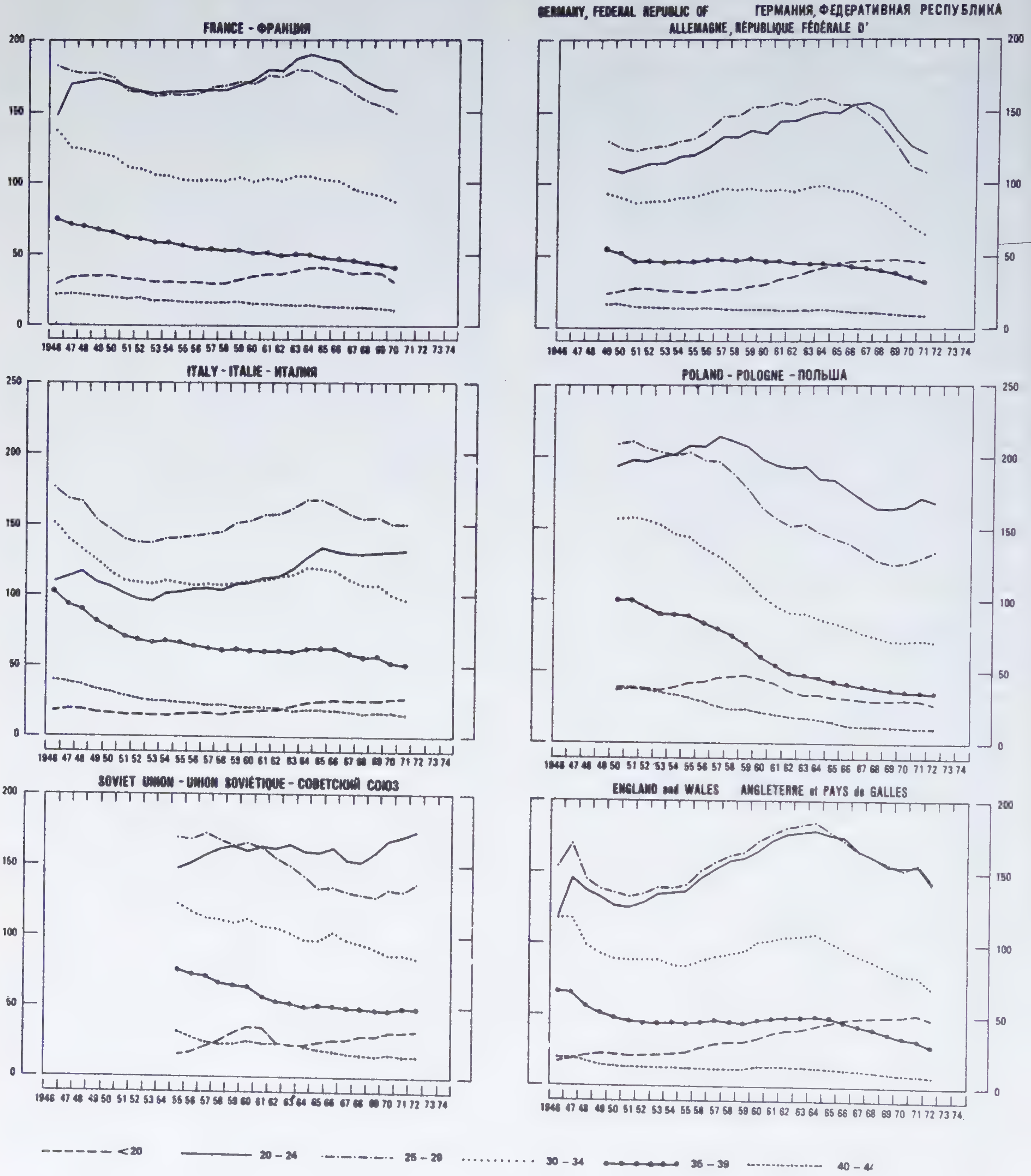
[7] See in particular tables IV.3, IV.9 and IV.13.

FIGURE 9

ASFRs, selected countries, 1946-1973

(Births per 1,000 women of given age)



The Netherlands, Switzerland, most of southern Europe and especially Ireland exemplify the opposite extreme where late marriage has kept fertility relatively low for women below age 25, but age at marriage has nevertheless been falling in these countries and fertility rates have risen.

For very recent years the only available indicator of nuptiality trends is the crude marriage rate. In the three countries of eastern Europe where there is a strong suggestion of rising fertility, marriage rates do appear to have gone up in the appropriate period, but age-specific fertility has changed very little for young women in Poland, and their share in total fertility has remained virtually constant in all three countries. Crude marriage rates have dropped very recently in the Federal Republic of Germany, and especially Sweden, without reducing the proportion of fertility occurring at young ages. In short, the relationship, if any, appears indeterminate at this point.

The late twenties are a pivotal age group; they account for about 30 per cent of total fertility (somewhat less in eastern Europe, Yugoslavia and the USSR), and there has been little change over the last 25 years. Only in certain countries where fertility rates tend to peak rather late, i.e. Denmark, Sweden and the Netherlands, have the proportions contributed by this age-group risen significantly. In the German Democratic Republic the rates for this age group have declined steeply along with those for older women.

After age 30, the relative importance of each age group drops off rapidly. Moreover, both the absolute rates and the relative contributions of older women have diminished very greatly with time. Age 30-34 accounted for 17 to 18 per cent of total fertility in most of eastern Europe in 1950, just over 20 per cent in Poland, Yugoslavia, the USSR, together with the majority of western and northern Europe, moving up towards 30 per cent in Italy, Spain, the Netherlands and Ireland. It has everywhere lost close to 5 percentage points during the ensuing period. From age 35 on, fertility is now not of any consequence at all except in Ireland and the South.

The causes of changing fertility at ages above thirty are very different from those that operate at the younger ages. The over-all extent of marriage remains of some importance, and fertility rates in Ireland would indeed be even higher at the older ages if it were not for the mitigating influence of high proportions remaining single. Divorce and re-marriage are aspects of nuptiality which also enter the picture. But the overwhelming factor becomes the reduction of childbearing within marriage. Family limitation not only has a bearing on period rates such as those under discussion here, but also ultimately determines completed cohort fertility. Sub-section 6, on marital fertility, evaluates this effect in quantitative terms, while the practice of birth control itself is taken up toward the end of the chapter.

Before leaving the topic of age-specific fertility, it is worth considering how these rates behaved during the secondary fertility phenomenon of the post-war era, the baby boom.[8] Figure 9 shows clearly that in England and Wales, France, the Federal Republic of Germany and Italy, among the countries which experienced rising total fertility rates from the 1950s up to about 1964, it was the younger women, especially those at ages 20 to 24, who were basically responsible for the upward movement. The baby boom was thus in a very real sense a reflection of the marriage boom. While the rates for women below age 20 tended to climb steadily through the post-war years, those for ages 20 to 29 moved down in the early 1950s but then climbed rapidly for ten or more years and finally dropped off sharply toward the end of the 1960s. Women in their early thirties participated in this trend to some extent in England and Wales and the Federal Republic of Germany but elsewhere they, as well as older women, experienced at most a temporary cessation in the long-term decline in fertility rates. Comparing individual cohorts in England and Wales, for example, women in their twenties in 1962 bore about one-third more children in that year than their predecessors did 10 years earlier. In 1972, these same women were in their thirties and bore more than 40 per cent fewer children than were born to women in their thirties in 1962. Thus declining rates for older women were not incompatible with rising over-all period rates when combined with the trend toward younger childbearing in most countries of western and northern Europe. Total fertility was already low in these countries at the time of the war and late marriage contributed substantially to this fact; hence the available potential for increase at the younger ages was considerable.

5. *Components of crude birth rate*

Using a technique of standardization more elaborate than the total fertility rate, the crude birth rate can be broken down into three underlying factors: age-sex structure, nuptiality and marital fertility. The evolution of these components within individual countries can then be traced, providing, in effect, a framework within which the interaction described above can be summarized. The sex-age factor itself includes the proportion of the total population which is female, the proportion of the female population composed of women in their childbearing years, and the age distribution of married women within this category. Nuptiality accounts for the extent of marriage among women by age, and marital fertility covers the actual childbearing performance of married women. By holding two components constant at a time, the independent effect of the third on year-to-year changes in the birth rate can be assessed.[9]

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[8] For a discussion of this topic in the general context of the developed world, see A. A. Campbell, "Beyond the demographic transition", *Demography* (Washington, D.C.), vol. 11, No. 4 (November 1974), p. 549.

[9] The methodology is described in detail in J. Berent and P. Festy, "Measuring the impact of some demographic factors on post-war trends in crude birth rates in Europe", *Proceedings of the 1973 General Conference of the International Union for the Scientific Study of Population*, Liège, 1973. The basic formula is as follows:

(Footnote continued on next page.)

Indices of these factors have been calculated for most European countries, starting from a base year at the beginning of the post-war period. Table V.3 presents the percentage change in each index over periods between important inflection points in the crude birth rate for each country; the detailed evolution of each factor is shown in figure 10. It should be stressed that the standard here is the structure of the birth rate at a particular point in time in each country; the approach does not permit the international comparison of levels as was possible in interpreting the total fertility rate. Furthermore, since the figures are based in many cases on estimates or approximations of the base population, the results are mainly of interest for the relative change they bring out, and the numbers have little significance in themselves.

Among the countries represented in figure 10, changes in the crude birth rate have generally been dominated by changes in marital fertility because age-sex structure and nuptiality have tended to offset each other, especially in the earlier part of the period. Sex structure (not shown separately here) proved to be influential only in the German Democratic Republic and Poland, and the age-sex factor can elsewhere be taken as showing essentially the effect of changes in age composition.

As has been indicated above, changing age structure typically exerted a strong negative influence on the crude birth rate everywhere except in southern Europe up to about the mid-1960s, i.e. through the period when small pre-war or wartime cohorts dominated the ages of parenthood. It accounts for as much as one-third of the post-war declines in the crude birth rate in eastern Europe. In Norway, Sweden and France birth rates would actually have risen if it had not been for this downward pressure, and the rising trend would in turn have been

TABLE V.3

The impact of changes in sex-age structure, nuptiality and marital fertility [a] on trends in crude birth rates in selected countries, 1950-1971

(Percentage change over indicated periods)

Region, country and period covered	Crude birth rate	Changes in crude birth rates due to changes in: [b]		
		Sex-age	*Nuptiality*	*Marital fertility*
Eastern Europe				
Bulgaria				
1950-1951	–17	–	1	–17
1951-1967	–34	–16	4	–25
1967-1970	10	1	–	9
Czechoslovakia				
1950-1959	–31	–14	10	–27
1959-1964	7	–	1	6
1964-1968	–14	5	–1	–17
1968-1971	10	4	–1	7
German Democratic Republic				
1950-1957	–6	–18	44	–23
1957-1964	15	20		
1964-1971	–25	–7	0	–19
Hungary				
1949-1954	12	–5	13	4
1954-1962	–43	–7	5	–42
1962-1970	14	2	–1	13
Poland				
1951-1968	–45	–15	11	–42
1968-1971	5	5	–4	4

(Footnote 9 continued.)

$$\frac{b}{p} \approx \frac{\bar{b}}{p} = \frac{w}{p} \cdot \frac{\sum \frac{\bar{B}_i}{W_i} w_i}{w} \cdot \frac{\sum \frac{\bar{B}_i}{M_i} m_i}{\sum \frac{\bar{B}_i}{W_i} w_i} \cdot \frac{\bar{b}}{\sum \frac{\bar{B}_i}{M_i} m_i}$$

where: b = all births in the given year
$\bar{b}$ = legitimate births in the given year
p = population size
w = total number of women
$\frac{\bar{B}_i}{W_i}$ = standard age specific fertility rates
$\frac{\bar{B}_i}{M_i}$ = standard age specific marital fertility rates.

The necessary population data by sex, age and marital status were available on an annual basis for a few countries including Sweden, the United Kingdom and France, and the evolution of sex and age structure and nuptiality could be observed to be gradual and regular in these cases. Assuming this to apply generally, the sex-age and nuptiality factors were calculated by interpolation when the population data were not available for all years; the index of marital fertility, which fluctuates more sharply, could then be derived from the residual. When the data were taken from censuses as much as 10 years apart, however, the results of direct interpolation would have been too approximate, and intercensal estimates of the proportions of women married by age were made before the indices were calculated.

TABLE V.3 (*continued*)

The impact of changes in sex-age structure, nuptiality and marital fertility [a] on trends in crude birth rates in selected countries, 1950-1971

(*Percentage change over indicated periods*)

Region, country and period covered	*Crude birth rate*	*Changes in crude birth rates due to changes in:* [b]		
		Sex-age	*Nuptiality*	*Marital fertility*
Northern Europe				
Denmark				
1951-1959	–11	–10	7	–8
1959-1966	10	5	4	2
1966-1970	–23	4	–3	–24
Finland				
1950-1970	–42	–6	12	–45
Norway				
1950-1970	–15	–18	30	–21
Sweden				
1950-1960	–17	–13	6	–10
1960-1964	15	1	1	11
1964-1971	–21	8	–10	–19
United Kingdom:				
England and Wales				
1951-1955	–3	–7	6	–2
1955-1964	20	–6	8	18
1964-1971	–14	4	1	–19
Scotland				
1951-1962	12	–11	22	3
1962-1971	–20	–1	6	–24
Western Europe				
Austria				
1951-1963	36	–11	26	22
1963-1970	–20	–	5	–26
France				
1954-1964	–3	–9	6	1
1964-1970	–8	6	1	–15
Germany, Federal Republic of				
1950-1964	19	–7	27	–
1964-1971	–31	–9	6	–28
Netherlands				
1950-1971	–24	–9	33	–37
Switzerland				
1950-1960	–	–4	15	–9
1960-1964	10	–1	5	5
1964-1971	–20	5	12	–32
Southern Europe				
Italy				
1951-1958	–1	–	3	–4
1958-1964	13	–4	5	11
1964-1970	–16	–4	7	–18
Yugoslavia				
1953-1957	–18	1	2	–20
1957-1971	–24	–11	9	–21

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[a] See chapter V, foot-note 9.

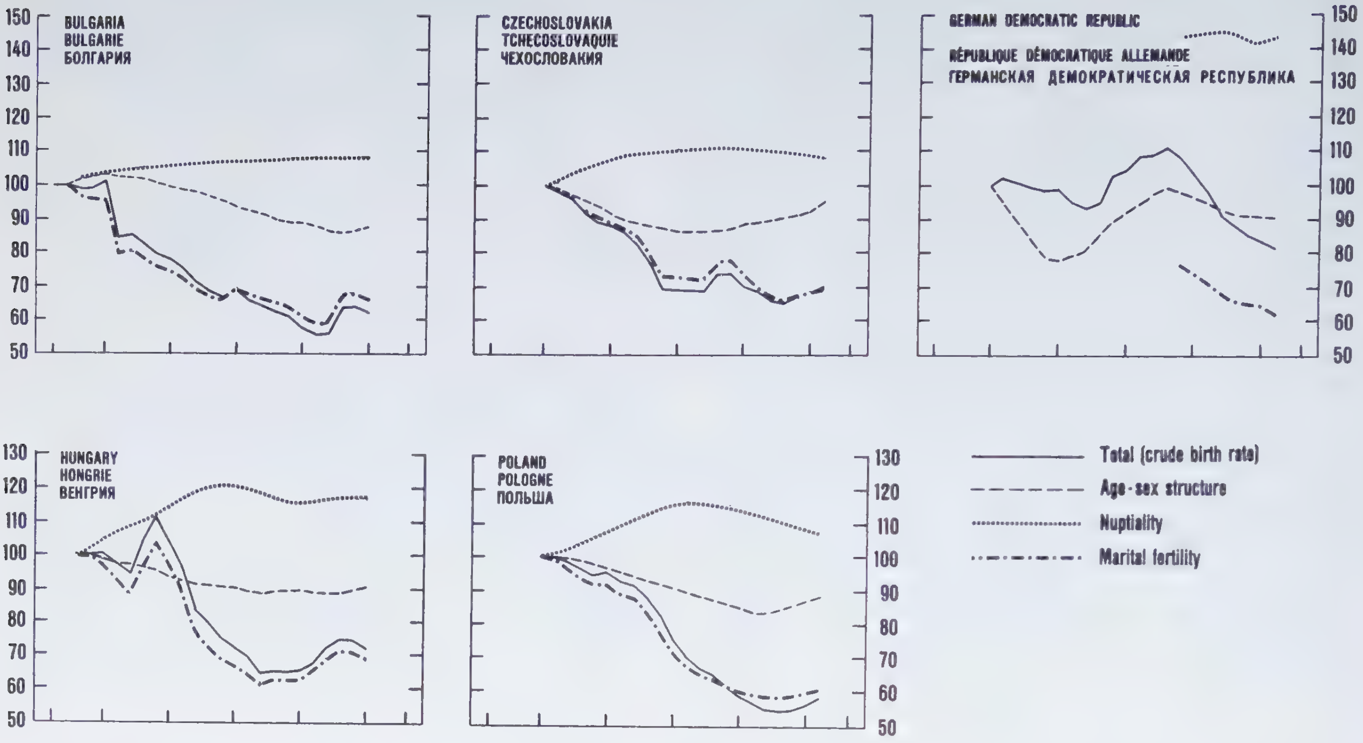
[b] Changes in crude birth rates on the assumption that only the indicated factor varies.

FIGURE 10

The impact of sex and age structure, nuptiality and marital fertility on crude birth rates, 1950-1971

(Index numbers, 1950 = 100)

EASTERN EUROPE



NORTHERN EUROPE

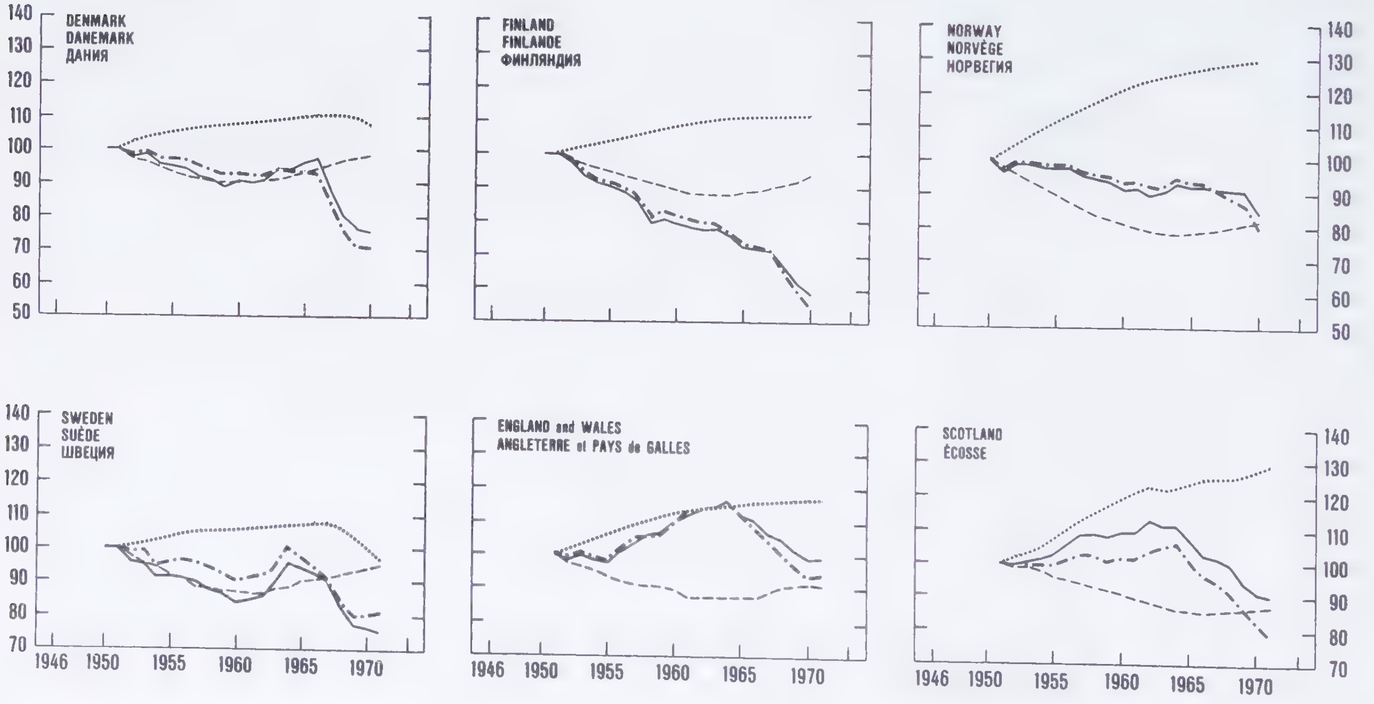
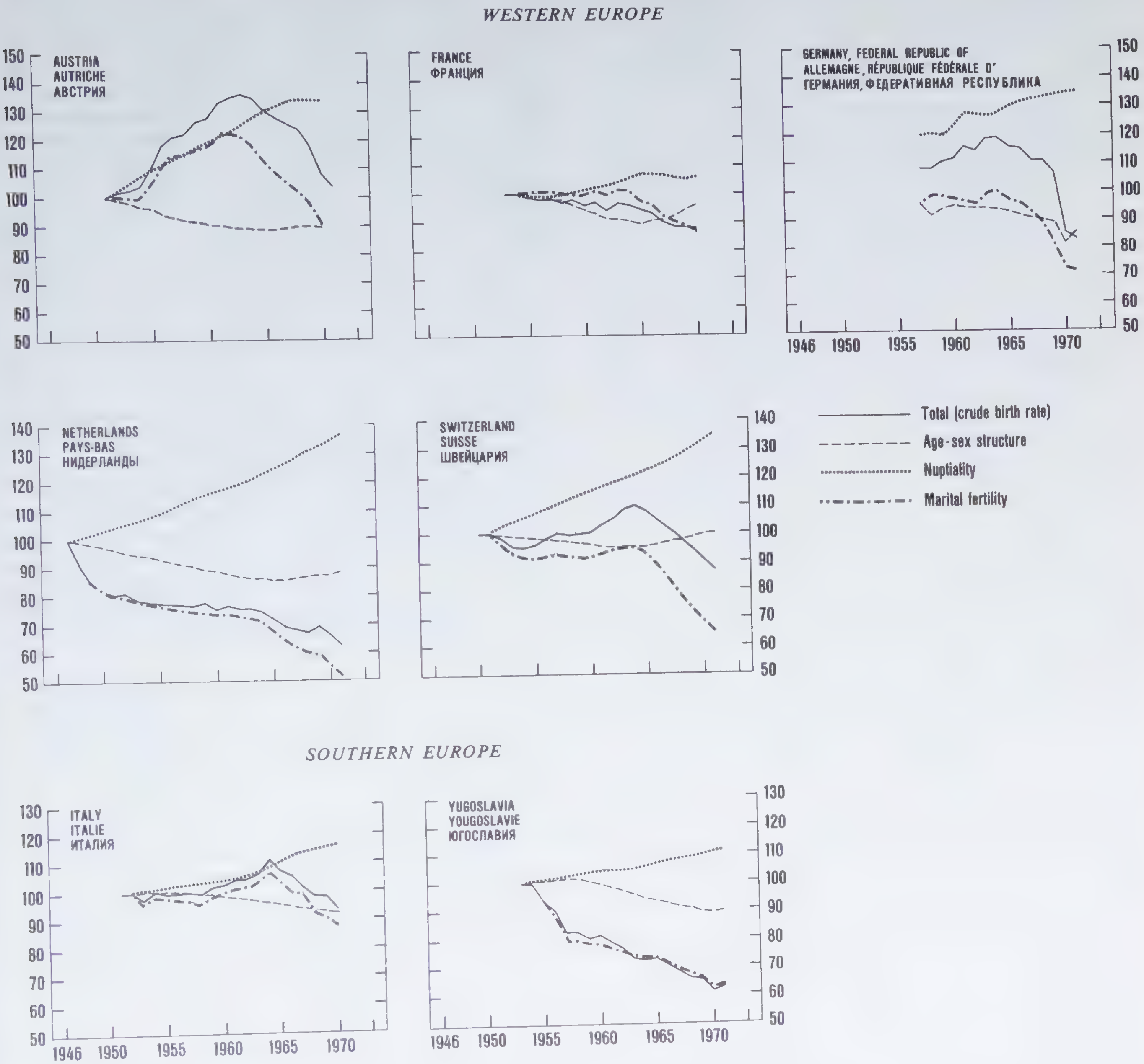


FIGURE 10 (*continued*)

The impact of sex and age structure, nuptiality and marital fertility on crude birth rates, 1950-1971



more pronounced in England and Wales, Austria, the Federal Republic of Germany and Switzerland. The reverse trend in the effect of age structure which became general when the larger cohorts of post-war babies began to reach maturity has so far had a more limited influence on the birth rate in most countries.

The data in figure 10 also confirm the role of nuptiality deduced from trends in age-specific fertility rates. This has had, on the whole, a continuously buoyant effect, but more so in northern and western Europe and the German Democratic Republic than in the rest of eastern Europe and southern Europe, and more so in the early post-war years than recently. Perhaps the most extreme example is the German Democratic Republic, where the crude birth rate would have increased by 44 per cent instead of 8 per cent before 1964 if this factor alone had been operating. Over the same period nuptiality is of equal importance with marital fertility as a cause of rising birth rates in England and Wales and Austria. Moreover, the rates would have dropped as much as 50 per cent in Finland and Yugoslavia, 45 per cent in the Netherlands and 40 per cent in Norway over the whole post-war period if it had not been for the mitigating influence of marriage. Nevertheless, nuptiality has been less important recently and has become a negative influence in some countries. It lost its momentum in the 1960s in Czechoslovakia and Poland, and in Sweden it has exerted a marked downward pressure on the birth rate since 1966.

The timing as well as the strength and direction of the effect of marital fertility has varied from place to place. It has been a potent negative force throughout the period in the German Democratic Republic, Finland and Yugoslavia. In other eastern countries it dominated the decline in the birth rates up to the mid-1960s, although in Bulgaria and Poland it dropped somewhat less than the crude birth rate itself from 1950 to 1967. Since then it appears to have been responsible for the modest upward movement of the birth rate in parts of eastern Europe. Elsewhere, this factor was less important in the earlier period except in England and Wales and Austria, where it contributed about equally with nuptiality to sharply rising birth rates. Since the mid-1960s marital fertility has been the major force behind the decline of the crude rate everywhere in western Europe and it is entirely responsible for dropping rates in Norway, England and Wales, Scotland, Austria, France, the Netherlands and Switzerland. Childbearing within marriage is in fact the central element in the study of fertility and a large part of the remainder of the chapter is devoted to the analysis of this phenomenon.

The balance between age-sex structure and nuptiality which accentuates the importance of marital fertility in determining the course of the crude birth rate, is not entirely fortuitous, because age composition and nuptiality are not in fact independent of one another. Moreover, there is an additional secondary interaction between age structure and marital fertility. The first of these, the relationship between age composition and nuptiality, results from the fact that women tend to marry men a few years older than themselves. When the cohorts reaching marriageable ages are sequentially larger, women must find partners among numbers of men relatively fewer than themselves, and nuptiality, at least as measured here, will decline. When each succeeding cohort is smaller than the one before it, women will have a more than adequate supply of possible mates, and higher proportions will be married at the peak ages of fertility. Since irregularities in the relative sizes of cohorts reaching their early twenties have been so considerable in post-war European populations, it seems likely that this built-in dependence of nuptiality on age structure accounts to some extent for the evolution of the former, even if less so than the genuine change in marriage patterns. The second relationship, the effect of marital fertility on age structure, arises because large numbers of young children themselves weight the age distribution against high birth rates. When proportions at the very young ages are low, the opposite is of course true. Although the impact of this effect has probably been minor, a negative correlation between the two components is clearly discernible in a number of northern and western countries such as Finland, England and Wales, France and Switzerland.

6. *Marital fertility*

The principal statistical factors underlying the crude birth rate having been examined, a more detailed analysis of the central phenomenon, marital fertility, is now in order. There are a number of different types of information bearing on this topic. In most countries, births are classified by the number of previous births to the mother, yielding in the first place distributions of current births by birth order and also, when the additional necessary data are available, parity progression ratios. Another look at cohort fertility measures is also appropriate in this context. Census schedules have begun to include more frequently a question on the number of children ever born, and tabulations of this material for married women through successive censuses are becoming an increasingly valuable body of information. Births classified by duration of marriage can also be cumulated to show the relative achievement of successive marriage cohorts. Finally, we have for several countries survey results on the total number of births expected by married women now in their childbearing years. Each of these will be taken up in turn with the view not only of elaborating our understanding of the recent past but also of gaining some insight into likely trends for the future.

Two statistics derived from distributions of current births by birth order are presented for selected years in table V.4: average birth order and the percentage of births of the fourth or higher order. It is important to recognize that such distributions are heavily dependent on the underlying composition of the female population by their stage in the family formation process. Ideally, one would like to be able to standardize for age and/or marital status, but appropriate data are not available. It is fair to say in any case that a trend which is sustained over a considerable period of years is almost certainly an indication of genuine change.

These figures support the notion that the over-all fertility decline documented above has occurred not so much because more women have had no children at all, as because families have been getting smaller. Declines in both measures are almost so universal and of such long duration as to be virtually incontrovertible. Average birth order was commonly in the region of 2.5 in 1950 and dropped over the next twenty years by about 0.5 in eastern and southern Europe, but by considerably less in the northern and western regions. Decreasing proportions of fourth and higher order births are largely responsible for this development; these proportions reached levels well below 10 per cent in most countries of eastern Europe around 1970 and remain as high as one birth in five only in southern Europe.

Period parity progression ratios (a_n) are free from the most important distorting influences which affect annual parity distributions. They summarize the probabilities characteristic of a given year that women at each parity would have borne additional children and thus, in principle at least, collectively reflect in a sensitive way current propensities to increase family size. On the other hand, they are restricted in scope by the lack of suitable data. In order to maximize the coverage for comparative purposes, estimates of ratios a_1 to a_4 are presented here which should be reviewed in general terms only (figure 11).[10]

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[10] In most cases, a_1 to a_4 have been calculated by relating the total number of births of order $n + 1$ to a weighted average of past births of order n. The weighting coefficients were taken from

(Footnote continued on page 96.)

TABLE V.4

Average birth order and percentage of births of the fourth or higher order

Region and country	Average birth order[a]						Percentage of births of 4th or higher order[a]					
	1950	1960	1965	1970	1972	1973	1950	1960	1965	1970	1972	1973
Eastern Europe												
Bulgaria	2.38	2.04	1.97	1.85	1.82	..	18.2	11.3	10.0	6.3	6.0	..
Czechoslovakia	2.46	2.28	2.17	1.93	1.87	1.90	19.3	15.4	13.1	8.6	7.6	6.0
German Democratic Republic	2.14	2.24	2.34	2.05	1.84	..	13.6	16.1	17.5	11.7	8.2	..
Hungary	2.44	2.18	2.00	1.88	1.87	1.86	19.0	14.0	11.2	8.1	7.6	7.3
Poland	2.59	2.53	2.46	2.22	2.13	2.09	23.0	21.8	20.2	15.5	13.5	12.7
Romania	..	2.29	2.21	2.46	2.43	2.40	..	16.5	14.8	19.4	19.9	19.5
Northern Europe												
Denmark	2.51	2.36	2.23	2.13	..	..	20.3	17.6	15.1	11.9	..	..
Finland	2.77	2.62	2.35	1.98	..	..	25.4	23.1	17.9	10.7	..	..
Ireland	..	3.76	3.57	..	..	..	..	44.6	41.1	..	..	..
Norway	2.30	2.28	2.28	2.08	..	..	16.5	15.3	16.0	11.5	..	..
Sweden	..	..	1.92	..	..	..	..		7.2	..	..	..
United Kingdom:												
England and Wales	2.24	2.27	2.27	2.11	2.01	..	14.5	15.6	15.6	11.8	9.8	..
Scotland	2.45	2.45	2.44	2.24	2.12	..	18.9	19.4	19.5	15.2	12.7	..
Western Europe												
Austria	2.31	2.41	2.46	2.30	2.26	2.12	16.0	18.8	19.8	16.4	15.7	14.6
Belgium	2.31	2.53	2.46	2.18	..	..	17.4	21.7	20.1	15.0	..	..
France	2.58	2.68	2.57	2.24	..	..	20.8	24.5	22.4	15.5	..	..
Germany, Federal Republic of	2.09	2.13	2.15	2.07	1.99	..	12.5	13.5	13.4	11.5	10.4	..
Netherlands	3.07	2.77	2.46	2.07	1.93	1.87	31.2	25.1	19.7	12.0	8.8	7.6
Switzerland	2.45	2.33	2.17	2.02	1.91	1.88	19.7	16.8	13.6	9.7	8.0	7.2
Southern Europe												
Greece	..	2.12	1.96	..	..	..	..	12.8	8.8	..	..	..
Italy	2.77	2.46	2.36	2.29	..	..	25.7	19.8	17.4	15.6	..	..
Portugal	3.29	3.07	3.11	2.93	2.82	..	36.3	31.6	32.1	28.6	25.5	..
Yugoslavia	2.88	2.72	2.60	2.39	2.31	..	27.5	25.5	23.0	18.7	17.0	..
USSR	2.58	2.43	2.64	2.48	2.39	..	22.7	20.4	24.2	21.0	18.7	..

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[a] The definition of the data varies primarily with respect to the inclusion or exclusion of illegitimate births and stillbirths. In most cases the figures pertain to the year indicated; in a few cases, particularly for 1950, the figures represent the closest year for which the data were available.

FIGURE 11

Parity progression ratios, 1950-1972 [a]

(*Probability of having another child, per 1,000 women with a given number of children*)

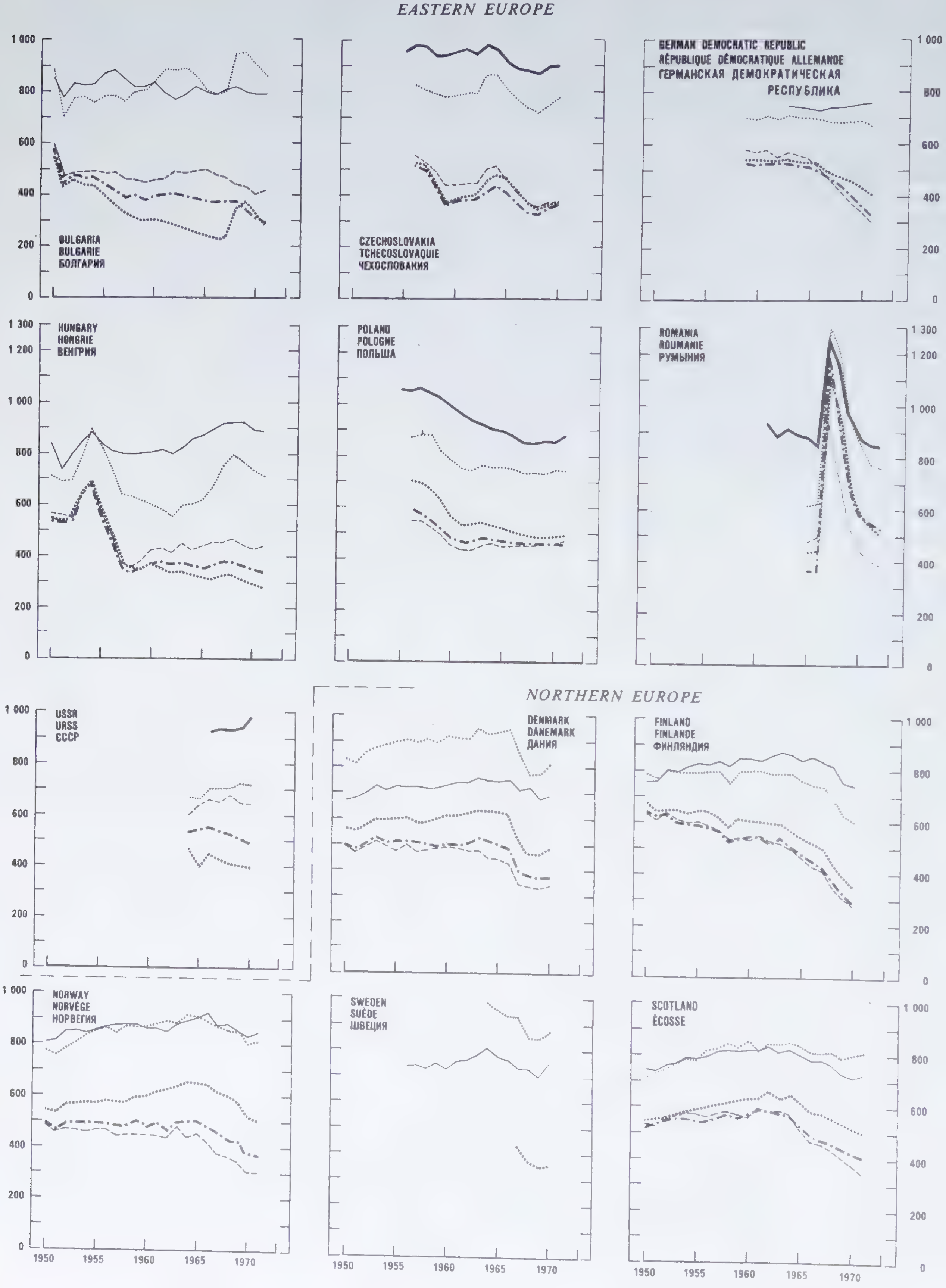
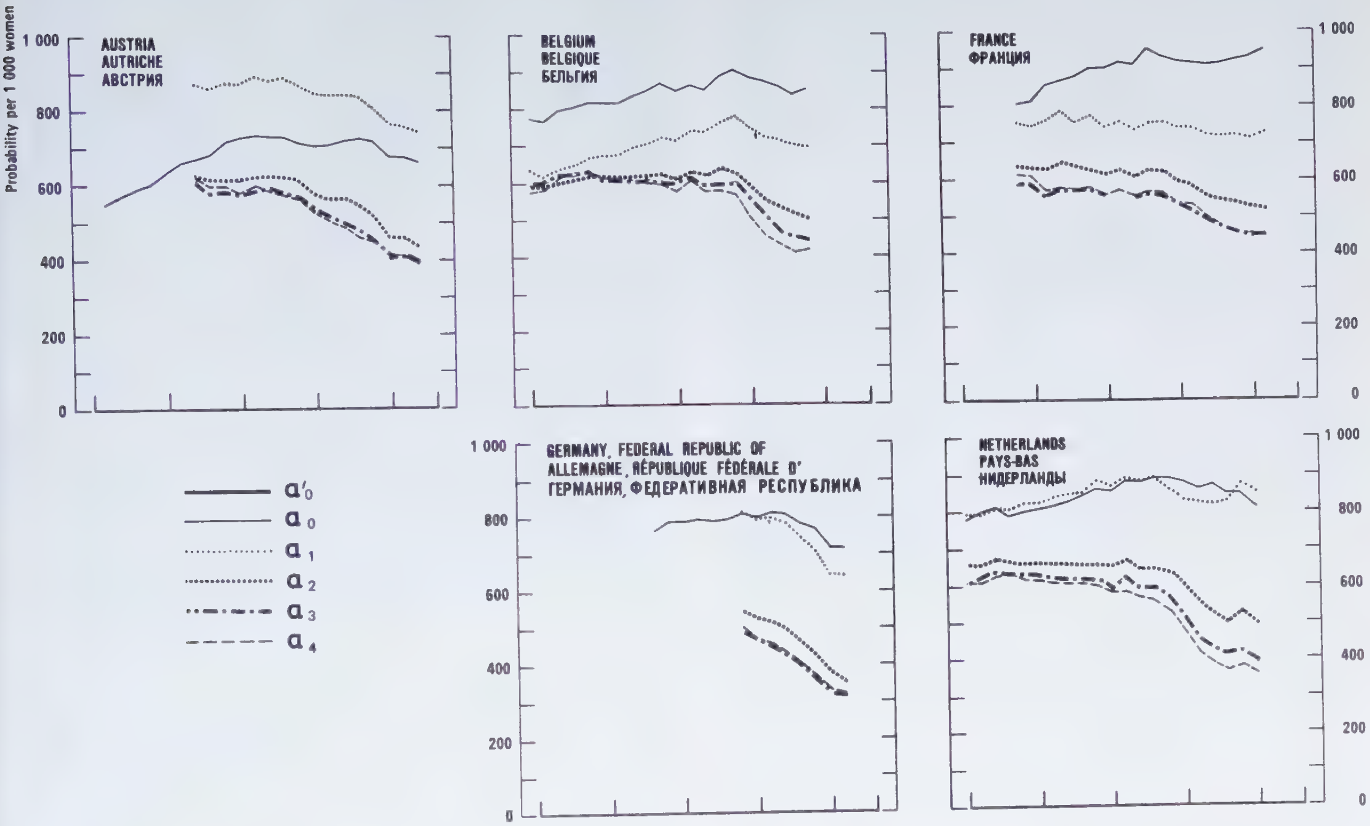


FIGURE 11 (*continued*)

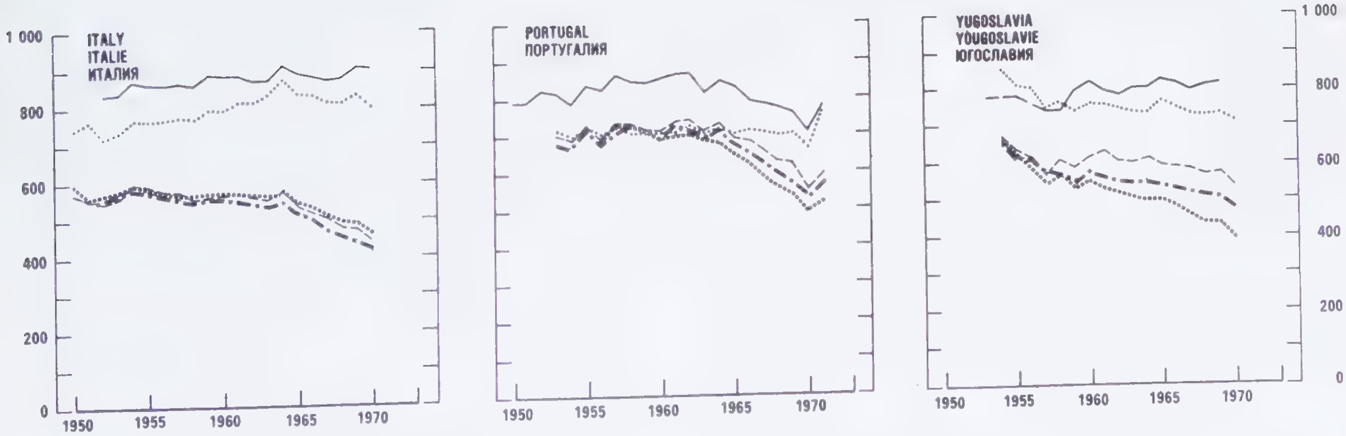
Parity progression ratios, 1950-1972 [a]

(Probability of having another child, per 1,000 women with a given number of children)

WESTERN EUROPE



SOUTHERN EUROPE



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[a] A_n is the number of women having a birth of order $n+1$ in a given year per 1,000 women of parity n. Estimates of a_0 (or a'_0) to a_4 have been prepared by the Secretariat: see chapter V for an explanation of the methodology.

The conclusions to be drawn from these graphs are similar in many ways to those inferred from the parity distributions. Although differentiation among the ratios for successive parities varies considerably among European countries, the likelihood of having a first or second child exceeds the likelihood of higher order births by a considerable margin. The gap has tended to become wider through the post-war period, so that two-child families have predominated more and more. These represented about 20 to 30 per cent of completed families as implied by the ratios of 1950 and around 30 to 45 per cent by 1970.

The probability that a married woman would have a first child is somewhat exaggerated for the countries where resort was had to an indirect measure (a'_0); elsewhere, childless couples have typically represented about 20 per cent of the total except in the case of France where they have been relatively rare and Denmark and Austria where they are more common. Having had a first birth, the probability of a second has also been high and clearly exceeds that of the first birth in Denmark and Austria, with the result that the proportions reaching parity two are similar there to the values for other countries. Proportions going on to have three children appear to be an especially responsive indicator of overall fertility trends; decreasing probabilities of having a third child have been especially marked in eastern and southern Europe, but this is an important characteristic also of recent trends in other regions. The probabilities of having a fourth and fifth child typically follow that of having a third child but at successively lower levels. Interestingly, the order of the ratios is reversed among the three higher parities in several countries of eastern and southern Europe and in the USSR; under conditions of rapid change, the series of rates can appear to be rather incongruous.

Trends in these parity measures give added insight into developments in countries which experienced the baby boom. The distribution of births by birth order was very often most heavily weighted toward the high side in 1960 rather than 1965, although the rates discussed above peaked for the most part around 1964. Evidently, by this time first and second births ensuing from the marriage boom tended to outweigh higher order births in a purely numerical sense. The progression ratios show, however, that the actual probabilities of having a third child, as well as a first or second, continued to climb in most countries of northern and western Europe up to the middle of the decade.

The situation in the countries of eastern Europe, where there have been definite signs of rising fertility in the last few years, is also interesting.[11] Changes in Czechoslovakia and Hungary have concentrated on second order births. The probabilities of births of each order, but especially the second, moved up in Czechoslovakia after 1968. Since 1970, average birth order has remained stable while the percentage of births of the fourth or higher order has declined, suggesting continuation of this trend. The implied proportion of women reaching parity two increased sharply in Hungary after 1962; there has been some decline in the probability of a second birth since 1968, but the annual parity distribution has remained stable. Rising nuptiality seems to have been the force behind the continuous decline of average parity and proportions of higher order births in Poland, because the progression ratios have not changed significantly. In Bulgaria, a policy specifically encouraging third births was introduced in 1968, and third births indeed figure disproportionately in the brief spurt in the birth rate that followed.

Despite international recommendations, a question to be answered by adult women on the number of children they have ever borne has not yet become a routine part of European census schedules. Theoretically, this is an extremely valuable source of data because fertility can be linked through the census with a wide range of social and economic characteristics which are rarely if ever recorded with birth registration. Even where the question has been asked, the published tables have often differed with respect to the marital status, age limitations, etc., of the base population selected. As a result, the figures assembled in table V.5 covering censuses in the post-war period are both fragmentary and lacking in strict comparability. To minimize the latter problem, they have been restricted to married women, classified by age. The age groups themselves represent successive birth cohorts of women recorded at different points of their reproductive life; the 45-49 age group represents those reaching the completion of childbearing and those over 50 represent a combination of the survivors of all earlier cohorts. When the data are available for two or more successive censuses of one country, the same cohorts can be followed over time (although minor differences in cohort composition will result from the addition of new marriages and the deletion of women who have died between the census dates).

The data of most interest are those for younger women, especially where a longitudinal comparison is possible.

(Footnote 10 continued.)

L. Henry, "Etude statistique de l'espacement des naissances", *Population*, Paris, 6th year, No. 3 (July-September 1951), pp. 425-444, and other writings by the same author; they have also been published in both editions of *Analyse Démographique* by R. Pressat (R. Pressat, *L'analyse démographique: méthodes, résultats, applications*, Paris, Presses universitaires de France, 1961, and *L'analyse démographique: concepts, méthodes, résultats*, Paris, Presses universitaires de France, 1973). The standard pattern "Bohême" was selected as representative of conditions of low fertility. In certain cases (Scotland, Belgium and the USSR), slightly different patterns were used in order to bring pre-existing series up to date, and in others (the German Democratic Republic since 1959, Hungary since 1956 and France since 1959) tabulations of births by birth order and duration since the previous births were available and permitted the direct calculation of a_1 to a_4. a_0 has been calculated where possible by relating first births by duration of marriage to marriages of women below 50. Otherwise (Bulgaria, Scotland, Austria and Portugal) the total number of first births has been related to a weighted average of past marriages, using weights based either on information available for the country itself or on the patterns of countries where fertility conditions were similar. Where birth order was not defined in terms of the existing marriage, an a'_0 was calculated by summing up the age-specific first birth rates, including illegitimate births.

[11] The weakness inherent in the synthetic cohort approach in a period of rapid change is strikingly illustrated in the case of Romania, where the probability of having an additional child up to and including a fourth jumped abruptly to exceed 1,000 in 1967.

In Hungary and Portugal women at all ages had borne fewer children in 1970 than their counterparts 20 years before, and the declines are especially sharp at the older ages. It appears that most change took place in the 1950s in Portugal and in the next decade in Hungary, but in both cases the comparison is blurred by a change in the population base from currently married to ever-married women tending to exaggerate the trend, especially for older women. Despite exactly the opposite change between the two censuses in Czechoslovakia, declines at each age are apparent there also. On the other hand, achieved fertility increased across the board for Norwegian women between 1950 and 1960, by as much as 20-25 per cent for women in their twenties and relatively little for women over age 35; taking the change in marital status into account, the picture for England and Wales is probably very similar to that of Norway. Despite high levels in 1961, accumulated births had also increased there at all ages by 1971. A distinct cohort pattern is discernible in the figures for the German Democratic Republic, which are the most coherent as well: women below age 25 in 1950 had borne more children than their predecessors by 1962 when they dominated age-groups 25 to 34, but their completed family size suggested by the figures for ages 35 to 44 in 1970 will probably be little higher than that of just older cohorts. There is remarkably little evidence of change for Swiss women between 1950 and 1960.

In summary, it can perhaps be said that existing data on children ever born show more promise for future analysis than present usefulness. At present, the clearest pattern that emerges is the trend toward younger childbearing. Regardless of whether average family size is increasing or decreasing over-all, a greater proportion of children are being born to women below age 30 to 34 and a corresponding smaller proportion to older women. This topic will come up again in subsequent sections.

Information similar in meaning to the average number of live births per ever-married woman, and, for the present at least, more complete in coverage over time and space, is also available from vital statistics data. Annual births classified by duration of marriage can be related to the number of women married in the appropriate year, yielding net duration-specific marital fertility rates. These can be cumulated on an annual basis to provide estimated period total marital fertility rates, or diagonally to give estimates of achieved fertility for marriage cohorts. The latter approach is the one used here. The series of cumulated rates for marriage cohorts selected at five-year intervals from 1948 to 1968 (in so far as each cohort has thus far achieved the given durations) is presented in appendix table A.V.3, which includes a note that discusses more fully the methodology of their computation. Despite their limitations, in particular the fact that they are usually underestimated in a degree which varies from country to country, these rates can be expected to give a valid indication of trends from year to year or cohort to cohort within a given country. In figure 12 the average number of births after three, six and ten years of marriage is compared for these same cohorts.

Cumulative fertility over the first three years of marriage moved downward most frequently from one cohort to the next in eastern Europe but upward in other regions. The data available for Yugoslavia suggest a pattern similar to that of eastern Europe, while Czechoslovakia resembles its western neighbours more closely. The average number of births occurring early in marriage declined sharply in Poland and Hungary from the cohort of 1953 to that of 1963, but then turned abruptly upward again in Hungary with the cohort of 1968 while remaining constant in Poland. In northern and western Europe, as well as in Italy and Czechoslovakia, there was little change from the cohort of 1948 to that of 1953, but then an upward movement of the order of 10 per cent occurred everywhere except in Finland, involving both the cohort of 1958 and that of 1963. The averages fell again with the cohort of 1968 in all the countries for which data are available.

After six years of marriage, inter-cohort patterns evident at three years' duration frequently apply to the cohorts five years older. The decline is particularly steep in Hungary and Poland from the cohorts of 1948 or 1953 to that of 1958, and it continues in Poland to the cohort of 1963. Elsewhere the increases between the cohorts of 1948 and 1958 again average about 10 per cent. Furthermore the change in direction which took place at three years' duration between the cohorts of 1963 and 1968 is discernible after six years between the cohorts of 1958 and 1963 in most countries. Downward movement of the average number of births at six years' duration of marriage is already established in Finland with the cohort of 1958.

The youngest of the selected cohorts to have attained 10 years' duration of marriage is that of 1958, and the recent turning point that shows up in the data for shorter durations is not apparent at this duration except in Finland. Disparities in absolute levels of achieved fertility between the countries of each region have become quite pronounced at this duration, but changes from the cohort of 1948 to that of 1958 follow very much the same pattern as was apparent at six years' duration of marriage. The one important exception is the case of the Netherlands where the average number of births in the first 10 years of marriage was very high for the cohort of 1948 and then came down slightly.

In sum, there appear to be three quite different kinds of development here. Fertility declines affecting all durations of marriage, but the longer more than the shorter, have been in progress since the war in Poland, Hungary and Yugoslavia. On the basis of this evidence, completed family size can be expected to continue to decrease in these countries among women reaching the end of childbearing in the 1970s. The trend appears to be reversing with recently married women in Poland and Hungary, but it is too soon to know whether an acceleration of childbearing early in marriage will result in higher average numbers of births at longer durations. Finland and the Netherlands are examples of a more classic form of decline where there has been little inter-cohort change early in marriage, but dropping averages are increasingly pronounced in the cumulated average of

TABLE V.5

Average number of live-born children per married woman by age, censuses 1949-1971

Region and country	Census year	Marital status of woman	Age of woman								
			15-19	20-24	25-29	30-34	35-39	40-44	45-49	50+	15+
Eastern Europe											
Bulgaria	1965	Ever-married	0.48	1.09	1.64	1.96	2.17	2.35	2.58	2.64[a]	2.01
Czechoslovakia	1961	Ever-married	0.57	1.03	1.74	2.19	2.43	2.54	2.48	2.62	2.32
	1970	Married	0.49	0.96	1.60	2.04	2.25	2.32	2.35	2.34	2.04
German Democratic Republic	1971	Currently married	0.57[b]	0.96	1.50	1.85	2.12	2.06	1.86	1.73[a]	1.76[c]
Hungary	1949	Legally married[d, e]	0.46[f]	0.94	1.58	2.13	2.50	2.82	3.08	3.87	2.83[g]
	1960	Legally married[d]	0.45	0.97	1.61	2.04	2.34	2.56	2.74	3.11	2.32
	1970	Ever-married	0.45	0.88	1.40	1.78	2.06	2.14	2.25	2.51	1.98
Poland	1970	Ever-married	0.59	1.05	1.72	2.28	2.71	3.02	3.12	3.16[h]	2.65[i]
Romania	1966	Ever-married	0.36	0.90	1.44	1.89	2.26	2.58	2.84	3.65	2.57
		Currently married	0.36	0.91	1.46	1.91	2.30	2.64	2.95	3.59	2.38
Northern Europe											
Ireland	1961	Married[j]	0.58	1.08	1.19	2.84	3.63	3.92	3.91	3.81	3.43
	1971	Married	0.63	1.09	1.90	2.96	3.80	4.24	4.28	3.90	3.45
[illegible]	1950	Married[e]	0.64	0.89	1.30	1.80	2.13	2.28	– 3.15 –		2.36
	1960	Married[e]	0.68	1.07	1.61	1.99	2.21	2.36	2.32	2.66	2.24
United Kingdom:											
ngland and Wales	1951	Currently married	0.45[k]	0.73	1.27	1.70	1.97	2.02	2.03	. .	1.69[l]
	1961	Ever-married	0.49	0.83	1.45	1.90	2.05	2.08	2.02	2.23	1.99
Northern Ireland	1961	Ever-married	0.58	1.03	1.79	2.54	3.04	3.31	3.25	3.41	2.97
Scotland	1951	Currently married	0.44[k]	0.85	1.45	1.98	2.42	2.48	2.47	. .	2.03[l]

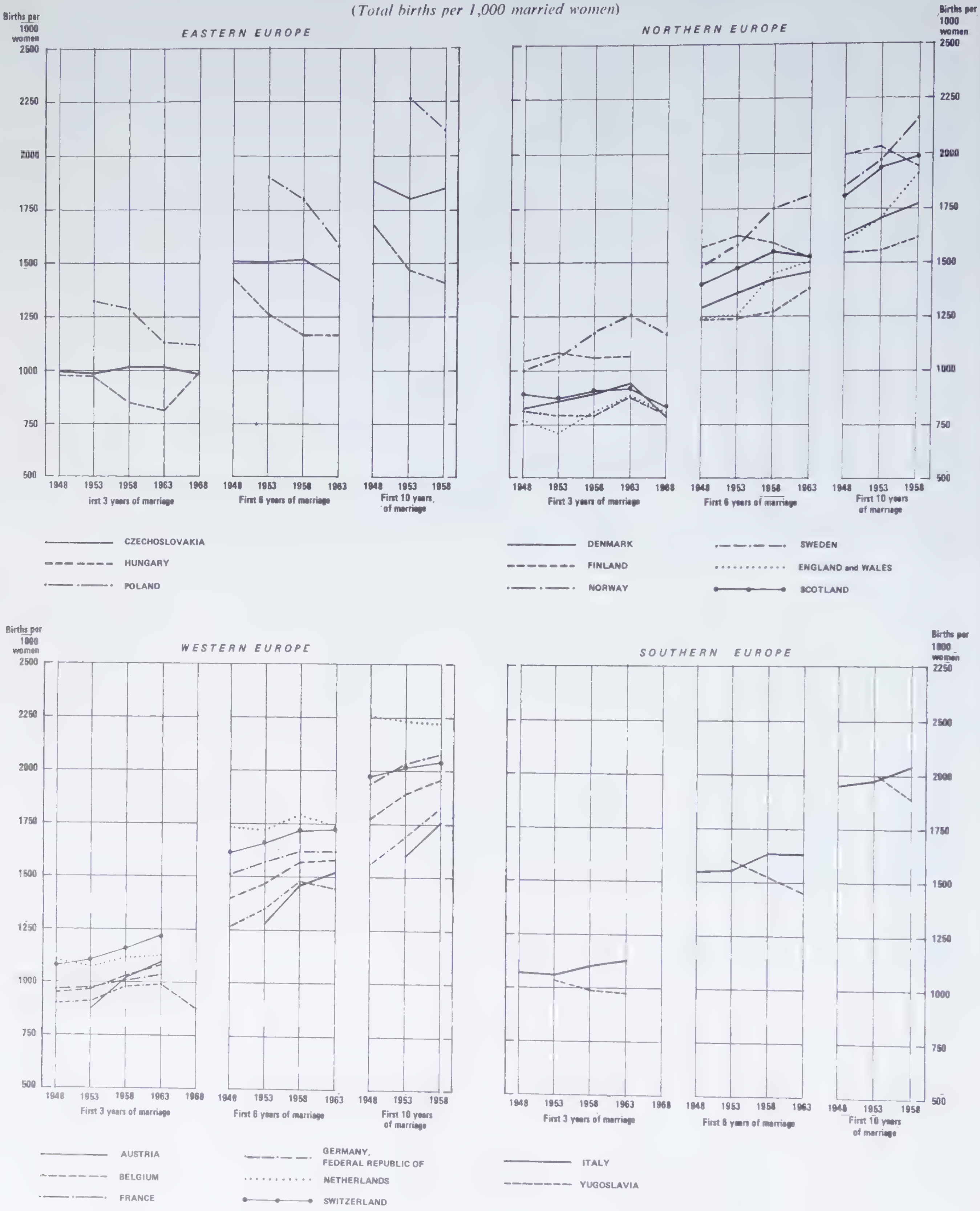
Western Europe											
Austria	1971	Currently married	0.80	1.14	1.70	– 2.36 –		– 2.34 –		2.14	2.14
Belgium	1961	Currently married	0.49	0.80	1.40	1.91	2.14	2.21	2.18	2.09	1.93
France	1954	Married	0.48	0.92	1.66	2.07	2.35	2.39	2.28	2.16[m]	2.05[n]
Germany, Federal Republic of	1950	Married[o]	0.62	0.78	1.10	1.51	1.90	2.08	2.06	2.33	1.91
	1962	Currently married[p]	0.57[q]	0.84	1.32	1.71	1.83	1.85	1.87	2.02	1.76[r]
	1970	Ever-married[p]	0.66	0.91	1.42	1.90	2.15	2.05	1.94	1.99	1.89
	1970	Currently married[p]	0.67	0.91	1.43	1.92	2.17	2.08	1.99	2.01	1.87
Netherlands	1960	Married[s]	0.65	0.84	1.51	2.25	2.80	3.19	3.21	3.33	2.71
	1971	Ever-married	0.92	0.92	– 1.92 –		– 2.87 –		3.15	3.38	2.73
Switzerland	1950	Married	0.59	0.87	1.35	1.92	2.22	2.30	2.30	2.69	2.20
	1960	Married[e]	0.53	0.83	1.37	1.93	2.27	2.45	2.37	2.34	2.09
Southern Europe											
Portugal	1950	Currently married	0.54	1.09	1.79	2.58	– 3.58 –		– 4.35 –		3.47
	1960	Ever-married	0.59[f]	1.06	1.67	2.36	2.91	3.35	3.54	3.74	3.03[g]
	1970	Ever-married	0.61	1.00	1.64	2.36	2.82	3.11	3.23	3.47	2.91
Spain	1970	Ever-married	0.69	0.95	1.57	2.30	2.69	2.87	2.91	3.27	2.76
Yugoslavia	1971	Ever-married	0.49	1.11	1.93	– 2.39 –		– 2.88 –		3.98	2.85

[a] Ages 50-54.
[b] Ages 18-19.
[c] Age 18+.
[d] Including stillbirths.
[e] Excluding separated.
[f] Ages 14-19.
[g] Age 14+.
[h] Ages 50-70.
[i] Ages 15-70.
[j] Children from present marriage.
[k] Ages 16-19.
[l] Ages 16-49.
[m] Ages 50-74.
[n] Ages 15-74.
[o] Excluding husband absent.
[p] Legitimate births only.
[q] Ages 17-19.
[r] Age 17+.
[s] Living with husband.

FIGURE 12

Cumulative marital fertility by duration of marriage for selected marriage cohorts [a]

(Total births per 1,000 married women)



[a] See appendix table A.V.3 for an explanation of the methodology.

successive cohorts at longer durations. Progressive reduction in completed family size should also continue for some time here. In other countries increases have been the order of the day at each duration through the births of the mid-1960s, when a downturn took place that seems to have cut across all cohorts to some extent. Here, increases in ultimate family size will probably occur among women completing their childbearing years in the 1970s, possibly of the order of 10 per cent, but certainly much less than trends in the period rates in the early 1960s would suggest. Thereafter, downward trends are quite likely.

The final topic to be considered under marital fertility is expectations of ultimate family size. The material is drawn from recent fertility surveys which attempted, among other things, to assess prospects for the relatively near future. As previously noted, analysis of current fertility is hampered by the intermingling of period effects with underlying trends. Women in their twenties who contribute most to current births are precisely those whose present behaviour is most difficult to put in perspective. In order to meet this problem, the surveys included questions asked of married women of fertile age concerning not only the number of children they already had but also anticipated childbearing in the future. The results could then be combined in the form of total births expected as a surrogate measure for the average size of families to be completed—in some cases—as much as 20 years later.

The data on expectations have a number of special characteristics and limitations, however. In the first place, the sample framework itself introduced certain kinds of bias affecting the interpretation of the data in terms of time trends. A cross-sectional sample limited to married women with an upper age limit implies a selection by age at marriage which is related to age on the one hand and to duration of marriage on the other. In order to be included in the sample, a young woman must have married at an early age, but this is also true of a woman who has been married for a relatively long time. Since age at marriage has a negative relationship with fertility, the extent of possible declines in completed family size, inferred on the basis of time trends in the data by birth cohorts, will be minimized while that derived from marriage cohorts will be exaggerated. In this study the samples were further limited to women in their first marriage. Given the reasonable assumption that women who sooner or later become widowed or divorced ultimately tend to have fewer children than women with unbroken marriages, this leads to an additional independent selection process favouring high fertility at both the upper ages and the longer marriage durations, which will be especially important in countries where divorce is common.

Probably more important as far as the inference of time trends from these data are concerned, is the fact that the total number of births expected consists for older women almost entirely of existing children, whereas for younger women it is heavily weighted toward hypothetical childbearing. Aside from the question of genuine changes in preferences, some young women will no doubt ultimately fail to reach the total number they expect because of unforeseen problems of infertility while others are overly optimistic about their ability to control their fertility and will end up with larger families than they now intend. When dealing with one-time survey data, it is possible neither to evaluate such life cycle effects quantitatively nor to disentangle them from apparent trends in time. Experience with successive surveys in the United States, however, has shown that there is a "considerable and highly variable tendency for a cohort's expectations to increase with age".[12]

Lastly, it should be recognized that the question on which the expectations variable was based differed from one country to another. In Belgium, Denmark, England and Wales and the Netherlands the question referred to the number of births expected *per se*. But in Poland it referred to the number of births planned, and in Czechoslovakia, France, Hungary and Yugoslavia to the number wanted or desired. While these definitions capture a sufficiently similar concept to justify treating the results together under the term expectations, one should be aware that the differences exist and may have affected the data in unpredictable ways. Some further shading of the meaning of the variable has been introduced in Czechoslovakia and England and Wales. In the former case, the component consisting of existing births referred to children surviving rather than the number ever born, and in the latter the minimum estimate of expectations was used whenever respondents gave a multiple or range answer to the question.

The mean number of births expected by marriage cohort and by birth cohort is reported for each of nine countries in table V.6. The age at marriage bias has been minimized here, as far as birth cohorts are concerned, by grouping all women born after 1940 together; in Belgium and Hungary where the surveys were taken earliest, this would include women up to the age of 25 and in Poland and France it would include everyone up to the age of 30. Because of the different survey dates, in fact, both the marriage and the birth cohorts designated in the table were intercepted at somewhat different points in their careers in the various countries, and for this reason the levels indicated are not exactly comparable from one country to another.

Average expectations have declined from the oldest to the youngest women in every country except Denmark and for the most recent cohort they fall in a rather narrow range between 1.9 and 2.5 children per woman. The difference between women born before 1931 and women born after 1941 is less than one-half of a child in Czechoslovakia, Hungary, England and Wales, Belgium and France, but approaches one child in Poland and Yugoslavia and exceeds this amount in Finland. Intercohort changes are quite consistently in line with this trend everywhere except Denmark, where only the youngest women expect fewer children than their immediate predecessors, but even so, their average is higher than that of the oldest group represented.

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[12] N. B. Ryder and C. F. Westoff, *Reproduction in the United States 1965* (Princeton, N.J., Princeton University Press, 1971), p. 52.

TABLE V.6

Total number of births expected by marriage cohort and birth cohort

(Averages per woman)

Region, country and year of survey	*All respondents*	*Marriage cohort*					*Birth cohort*			
		Before 1951	*1951-1955*	*1956-1960*	*1961-1965*	*1966 or later*	*Before 1931*	*1931-1935*	*1936-1940*	*1941 or later*
Eastern Europe										
Czechoslovakia[a] (1970)	2.37	2.77	2.40	2.50	2.29	2.19	2.42	2.52	2.47	2.24
Hungary (1966)	2.19	2.47	2.21	2.05	1.87		2.34	2.23	2.06	1.92
Poland[b, c] (1972)	2.80	3.45	3.06	2.75	2.47	2.24	3.20	2.96	2.74	2.36
Northern Europe										
Denmark[d] (1970)	2.55	2.71	2.65	2.61	2.45	2.44	2.44	2.63	2.65	2.51
Finland (1971)	2.55	4.00	3.05	2.77	2.34	2.02	3.28	2.80	2.64	2.15
England and Wales[e] (1967)	2.21	2.55	2.42	2.24	1.82	1.71	2.31	2.40	2.21	1.91
Western Europe										
Belgium[b, f] (1966)	2.39	2.72	2.41	2.34	2.17		2.53	2.39	2.34	2.15
France (1972)	2.55	2.86	2.94	2.64	2.55	2.15	2.63	2.81	2.65	2.31
Southern Europe										
Yugoslavia (1970)	2.71	3.39	3.05	2.70	2.47	2.13	3.07	3.00	2.72	2.33

Source: Fertility and Family Planning in Europe around 1970: A Comparative Study of 12 National Surveys (forthcoming in the United Nations Population Studies series).

[a] Number of children surviving plus additional births expected.

[b] Marriages of less than 18 months duration excluded.

[c] Including women up to 50 years of age.

[d] Excluding the central municipalities of Copenhagen.

[e] Minimum estimate of births expected.

[f] Limited to women below 40 years of age.

The extent of the suggested decline is much greater when the data are presented by marriage cohort, and Denmark is now included. Women married after 1966 in Poland and Yugoslavia report that they expect more than one child fewer on the average than women married 15 or more years earlier, and the difference is of the order of two children in Finland. Inconsistencies in the direction of change from one cohort to another are confined to Czechoslovakia and France. The most recent marriage cohort reports expectations only marginally over two children in most countries.

These results are interesting in the light of fertility trends described earlier. The sharpest declines indicated here are for Finland where period measures also indicate extensive and persistent declines since the war, and the cumulated fertility of successive marriage cohorts has dropped, at least since the cohort of 1953. There is, however, a reduction in expectations of almost one child from women married before 1951 to those married between 1951 and 1955, which actually runs counter to the data assembled in the cumulated marital histories for the cohorts of 1948 and 1953. Similarly, in Hungary, Poland and Yugoslavia expectations have fallen consistently with other indicators. Unfortunately, the survey date in Hungary was too early to test conclusively whether the recent reversal of trend documented in various period and cohort measures would actually be reflected in expectations also.

For other countries, the situation is more complex. England and Wales, for instance, the usual rates as well as cumulated marital histories by cohort give an unmistakable picture of rising fertility from the late 1950s into the mid-1960s. In the expectations data, the only suggestion of upward movement is by birth cohort, between women born before 1931 and those born from 1931 to 1935. Inter-cohort trends outlined in the cumulative histories for Denmark are reflected in the expectations data by birth cohort, if not in those by marriage cohort, and in Czechoslovakia also the series are not incompatible. Period measures are ambiguous in the case of Belgium and France, but substantial increases in ultimate family size are suggested in the achieved fertility of marriage cohorts at least up to the cohort of 1958. In these two countries the expectations data show consistent moderate declines for Belgium and a rising trend only between the earliest cohorts in France.

The duration-specific marital fertility rates on which the cumulative cohort histories are based are recognized to be underestimates as well as being subject to various kinds of bias. Furthermore, comparisons of average expectations with the achieved fertility of more recent cohorts, as well as with period measures, may be heavily influenced by changes in the time pattern of childbearing. Nevertheless, the expectations data for older cohorts should correspond with measures of achieved fertility in a general qualitative way. While the observed similarities are gratifying, it seems likely that downward trends in ultimate family size are somewhat exaggerated in the expectations data, especially for marriage cohorts. The important fact remains, however, that expectations for the most recent cohorts in both series are universally low, usually close to replacement level. Regardless of how well time trends may be reflected in the expectations data for earlier cohorts, developments in fertility control alone are such as to make it seem likely that women now at the height of their childbearing have the opportunity of realizing their expectations.

Changes in the parity distributions underlying the average total number of births expected indicate increasing concentration on the two-child family, while families of four or more children are rapidly disappearing.[13] These trends together account almost entirely for the declining averages. Very few women in any of the countries surveyed expect no children at all, and the proportion expecting one child is also relatively small. At the high end of the scale, four or more children is the size of family most frequently expected by women married for fifteen years or more in four out of the nine countries. This proportion declines steeply everywhere with decreasing duration of marriage to less than 10 per cent for recently married women. Three-child families vary in importance, usually representing about one-quarter of the total; but among recently married women, the trend is generally downward. Parity two, which represents as small a proportion as 25 per cent among Belgian women married 15 years or more, dominates the distribution to a greater and greater extent among women married more recently. One-half to two-thirds of the women married less than five years expect two children. In most countries the proportion expecting two children has grown not only to keep pace with the drop in the relative numbers of couples expecting four or more, but also to a lesser extent at the expense of the proportions expecting no children or only one. Thus, the smallest families represent an important and growing fraction of the total only in England and Wales, and possibly in Hungary.

Together, these various observations give a remarkably coherent picture of the directions and extent of changes in marital fertility in Europe. Childbearing within marriage declined steeply in most eastern countries until the mid- to late 1960s when it levelled off and even began to rise again in some cases. It is too soon to tell whether this recent development is only a temporary consequence of special pro-natalistic measures taken by the respective governments or whether it will be of lasting significance. Information on the USSR is scanty, but there are no visible signs of a halt to the decline in the fertility levels of the USSR as a whole observed in the 1950s and 1960s.[14] Rising marital fertility was clearly a central force in the baby boom which was widespread throughout northern and western Europe, but since the mid-1960s there have been sharp declines in these countries so that completed family size will probably not rise for cohorts of women married after 1958. Only in southern Europe have moderate downward trends prevailed throughout the post-war period. Regardless of the direction of change in the volume of childbearing, two-child families are becoming more and more prevalent and families of more than three children are already exceptional. Thus the growing similarity among European nations with regard to reproductive behaviour is a widely established trend.

7. *Family building patterns*

It becomes increasingly clear that under conditions of controlled fertility the timing of births has considerable potential impact on fertility trends as they are evaluated at any given moment. The topic was introduced in discussing the trend toward younger childbearing in connexion with age-specific fertility. The pace of childbearing after marriage is another aspect of timing. The question here is to what extent changes in family building patterns may have accentuated or attenuated the trends observed in period measures over and above the effect of age at marriage and declining ultimate family size. This is especially important in attempting to understand the very rapid change in period rates in progress at the present time. Crucial as the subject is, documentation is scarce and frequently difficult to interpret.

For a preliminary view, but one that at least has the advantages of being up to date and covering almost all countries, the mean age of mothers is shown in table V.7. These averages were calculated from the annual distributions of current live births by age of mother, hence they are heavily dependent on the current age distribution of married women. While changes in the female age distribution have tended to counter-balance declining average age at marriage, some lowering of the average age of mothers would be anticipated in most countries up to at least the mid-1960s on the basis of changes in the age distribution of married women alone. Curtailment of ultimate family size would also in itself have had a depressing effect on the average age of mothers; even if the age distribution of mothers remains identical for each birth order, the over-all mean will decline as the proportion of higher births diminishes. Perhaps, therefore, the most that can be said with certainty about the very consistent declines in the average age of mothers throughout the post-war period which are apparent in table V.7, is that the pace of childbearing has probably not been decelerating. Wherever the documentation is available, the declines evidently continue into the 1970s, regardless of whether recent period fertility measures have been moving up or down. The only exception is Sweden where, it will be remembered, crude marriage rates have dropped precipitously, and the mean age of mothers appears consequently to have levelled out.

A second approach to the question of timing of births, and one that loses relatively little in terms of current relevance, consists of comparing the achieved fertility of marriage cohorts early in marriage with their ultimate expectations concerning family size. Increasing proportions of ultimate expected family size accumulated at an early point in marriage would indicate that the pace of childbearing is accelerating regardless of trends in the absolute figures of either achievement or expectations:

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[13] See the Comparative Fertility Study, chap. V.

[14] A survey of family intentions carried out in 1969 showed considerable differences in the expected ultimate family size between rural and urban areas and between various parts of the USSR, indicating a potential for further declines in the over-all levels of marital fertility.

TABLE V.7

Mean age of mothers

(Average number of years) [a]

Region and country	1950	1960	1965	1970	1971	1972	1973
Eastern Europe							
Bulgaria	26.4	25.5	25.1	24.7	24.6	..	..
Czechoslovakia	27.1	26.2	25.8	25.0	..	..	..
German Democratic Republic	..	25.8	25.9	25.4	..	25.2	..
Hungary	27.1	25.9	25.8	25.4	25.2	25.1	25.1
Poland	27.9	27.5	27.5	26.4	26.3	26.2	26.1
Romania		26.3	26.4	27.8	26.5	26.2	26.0
Northern Europe							
Denmark	28.4	27.2	26.3	26.3	26.2	..	..
Finland	29.5	28.3	27.5	26.3	..	..	..
Ireland	..	31.6	30.8	29.9	..	..	..
Norway	29.8	28.5	27.4	26.3	26.2	..	..
Sweden	28.6[b]	27.8	26.7	26.5	26.5	26.5	..
United Kingdom:							
England and Wales	28.5	27.8	27.2	26.4	26.3	..	..
Scotland	28.8	27.8	27.4	26.6	26.4	..	..
Western Europe							
Austria	28.9	28.2	27.2	26.6	26.6	..	26.5
Belgium	28.6	28.3	27.9	27.0	..	..	..
France	27.9	27.9	28.0	27.1	27.0	..	..
Germany, Federal Republic of	27.8	28.3	28.0		27.7	27.5	..
Netherlands	30.7	29.7	28.6	27.4	27.2	..	..
Switzerland	29.7	28.8	28.0	27.6[c]	27.5	..	..
Southern Europe							
Greece	..	28.4	28.4	27.7	27.6	27.4	..
Italy	29.5	29.0	28.7	28.2	..	..	..
Portugal	29.7	29.2	29.2	28.8	28.7	..	..
Spain	29.5	29.9	30.1	29.4	29.1	..	..
Yugoslavia	27.5	27.4	27.2	26.4	26.2	26.1	..
USSR	..	28.1	27.8	27.8	27.5	27.5	..

[a] Calculated from distributions of current live births by age of mother. [b] 1951. [c] 1969.

decreasing proportions would indicate the opposite. This extends the comparison made in the previous section between over-all achieved and expected fertility data, assuming now that the two series are sufficiently compatible to bring out specific changes in the time pattern of births. Table V.8 shows the ratio of births achieved to births expected in the countries for which expectations data are available, choosing six years duration of marriage arbitrarily as the dividing line between earlier and later childbearing.[15]

The percentage of ultimate births occurring in the first six years does in fact appear to rise very generally from one cohort to the next, suggesting again the gradual compression of childbearing into a shorter period early in marriage. The trend is less marked in the eastern countries than in other parts of Europe. However, in view of the fact that the expectations data may overstate the downward trend in completed family size, it is not possible to interpret the ratios unambiguously. Also, and perhaps more importantly, decreasing family size would in itself cause the ratios to rise even if there were no changes in the timing of births, for the same reasons as mentioned above concerning the falling mean age of mothers (assuming in this case that the original time span of births averaged more than six years). The most important lesson to be learned from the juxtaposition of these two very different kinds of data is that cohort trends in achieved fertility at early stages in marriage can give a misleading impression of trends in ultimate family size when, simultaneously, changes in the timing of births are occurring.

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[15] The expectations data are taken directly from table V.6; the figures on achieved fertility are those underlying figure 12 and actually represent the single year marriage cohorts of 1948, 1953, 1958 and 1963.

TABLE V.8

Average number of births during the first six years of marriage as proportion of ultimate expected family size [a]

(Averages per woman and percentages)

Country, region and births	*Marriage cohort:*			
	Before 1951	*1951-1955*	*1956-1960*	*1961-1965*
Eastern Europe				
Czechoslovakia				
Achieved	1.51	1.50	1.52	1.44
Expected	2.77	2.40	2.50	2.29
Percentage ratio	*55*	*63*	*61*	*63*
Hungary				
Achieved	1.43	1.27	1.17	1.17
Expected	2.47	2.21	2.05	1.87
Percentage ratio	*58*	*57*	*57*	*63*
Poland				
Achieved	..	1.91	1.79	1.56
Expected	3.17	2.88	2.60	2.39
Percentage ratio	..	*66*	*69*	*66*
Northern Europe				
Denmark				
Achieved	1.29	1.37	1.42	1.46
Expected	2.71	2.61	2.65	2.45
Percentage ratio	*48*	*52*	*54*	*59*
Finland				
Achieved	1.57	1.63	1.59	1.52
Expected	4.00	3.05	2.77	2.34
Percentage ratio	*39*	*53*	*57*	*65*
England and Wales				
Achieved	1.24	1.26	1.45	1.50
Expected	2.55	2.42	2.24	1.82
Percentage ratio	*48*	*52*	*65*	*82*
Western Europe				
Belgium				
Achieved	1.40	1.47	1.57	1.59
Expected	2.72	2.41	2.34	2.17
Percentage ratio	*52*	*61*	*67*	*73*
France				
Achieved	1.51	1.57	1.62	1.62
Expected	2.88	2.94	2.64	2.55
Percentage ratio	*52*	*53*	*61*	*64*
Southern Europe				
Yugoslavia				
Achieved	..	1.60	1.52	1.45
Expected	3.39	3.05	2.70	2.47
Percentage ratio	..	*52*	*56*	*59*

Source: Fertility and Family Planning in Europe around 1970: A Comparative Study of 12 National Surveys (forthcoming in the United Nations Populations Studies series) and appendix table A.V.3.

[a] See foot-notes to table V.6.

In a number of European countries current births are tabulated by birth order in addition to duration of marriage. Where such data are available, it is possible to compare separately the tempo at which first, second births, etc., are accumulated, giving a far more precise picture of family building patterns than is possible using aggregate statistics. Furthermore, the effects of changes in timing can be clearly separated from the effects of changes in the parity distribution. Appendix table A.V.4 gives cumulated fertility by birth order in 11 countries of Europe for the same selected marriage cohorts presented previously, and four examples are illustrated in figure 13. Unfortunately, none of the countries of eastern Europe is represented. The underlying methodology is essentially the same as that involved in calculating the over-all duration-specific marital fertility rates discussed in footnote *a* of appendix table A.V.3. Hence for each cohort the denominator is always the same, namely the initial number of marriages of women less than 50 years of age, regardless either of birth order or of duration of marriage, and similar problems of underestimation arise in the case of the absolute figures.

Both the total proportion of women experiencing a first birth and the rate at which first births accumulated rose uniformly from the marriage cohort of 1948 to that of 1963 in most countries. Typically, in fact, each successive cohort had already achieved more first births in the shorter duration for which it could be observed than had its predecessor.[16] However, the degree of change was relatively small in Italy, where initial levels were high, and much greater in such countries as France and Switzerland. Moreover, the trend is far less well established for the cohort of 1963. In Belgium, France and Italy this most recent cohort had not yet surpassed that of 1958 in total accumulation of births but they were continuing to build up at a faster rate. In England and Wales the rate itself appears to slacken sooner for this last cohort, and in Scotland it has fallen far behind.

The situation is similar for second births. In most cases, each successive cohort accumulated second births faster than its predecessor, and parity two had been reached by higher proportions in the relatively shorter periods of observation up to the cohort of 1963. For this last cohort, the rate of accumulation continued to climb, but sufficiently less rapidly to call into question whether the proportion would ultimately become as high. In the Federal Republic of Germany the rate even declined for the cohort of 1968, and in Finland both the maximum rate and the maximum probable accumulation of second births were recorded for the cohort of 1953.

Trends regarding third and fourth births are more difficult to document because the recent cohorts have had relatively little opportunity to reach the higher parities. At seven years of marriage, the build-up of third and fourth births declines almost monotonically from one cohort to the next in Finland, France and the Netherlands; in Finland third births actually dropped by 10 per cent and fourth births by 65 per cent from the cohort of 1948 to that of 1963. Elsewhere it was usually the cohort of 1958 which accumulated third and fourth births most rapidly early in marriage, although the cohort of 1963 frequently ranks the lowest in this respect among those observed. The amount of variation over-all is again very small in Italy, and it is especially highly differentiated in Sweden where third births fell only 9 per cent from highest to lowest but fourth births dropped nearly by one-half.

Here we have solid documentation of acceleration in the pace of childbearing early in marriage. Its deceleration later on appears to be largely a function of declining over-all family size. Nevertheless, third births and even fourth births continued to accumulate more rapidly in many parts of Europe through cohorts of women married in the early 1960s. When one considers the combined effect of such trends in successive marriage cohorts, it is apparent that changes in birth spacing must have been an integral part of the baby boom phenomenon. Even the build-up of lower order births early in marriage began to slacken with women married after the mid-1960s, thus removing one source of upward pressure on the period rates. While methodological considerations may affect national comparisons of absolute values, for which reason little stress has been given in the discussion to levels *per se*, this would be most unlikely to account for the observed relative changes within countries. Regrettably, suitable data are not available for a wider representation of countries.[17]

The sample fertility surveys include a body of information concerning the timing and spacing of births which adds considerable depth to our understanding of the topic. Six of the European countries included in the Comparative Fertility Study collected data which are useful in this respect. Once again, it is important to keep in mind the special characteristics of the survey data. The focus here is on the mother's age at the time of the first birth and the length of the intervals between live births. Since these facts are known only for women who have experienced a first birth or completed the interval in question, and the age must be higher or the interval longer for any additional women who eventually do so, the results are inevitably biased downward to some degree. For this reason the statistics regarding the

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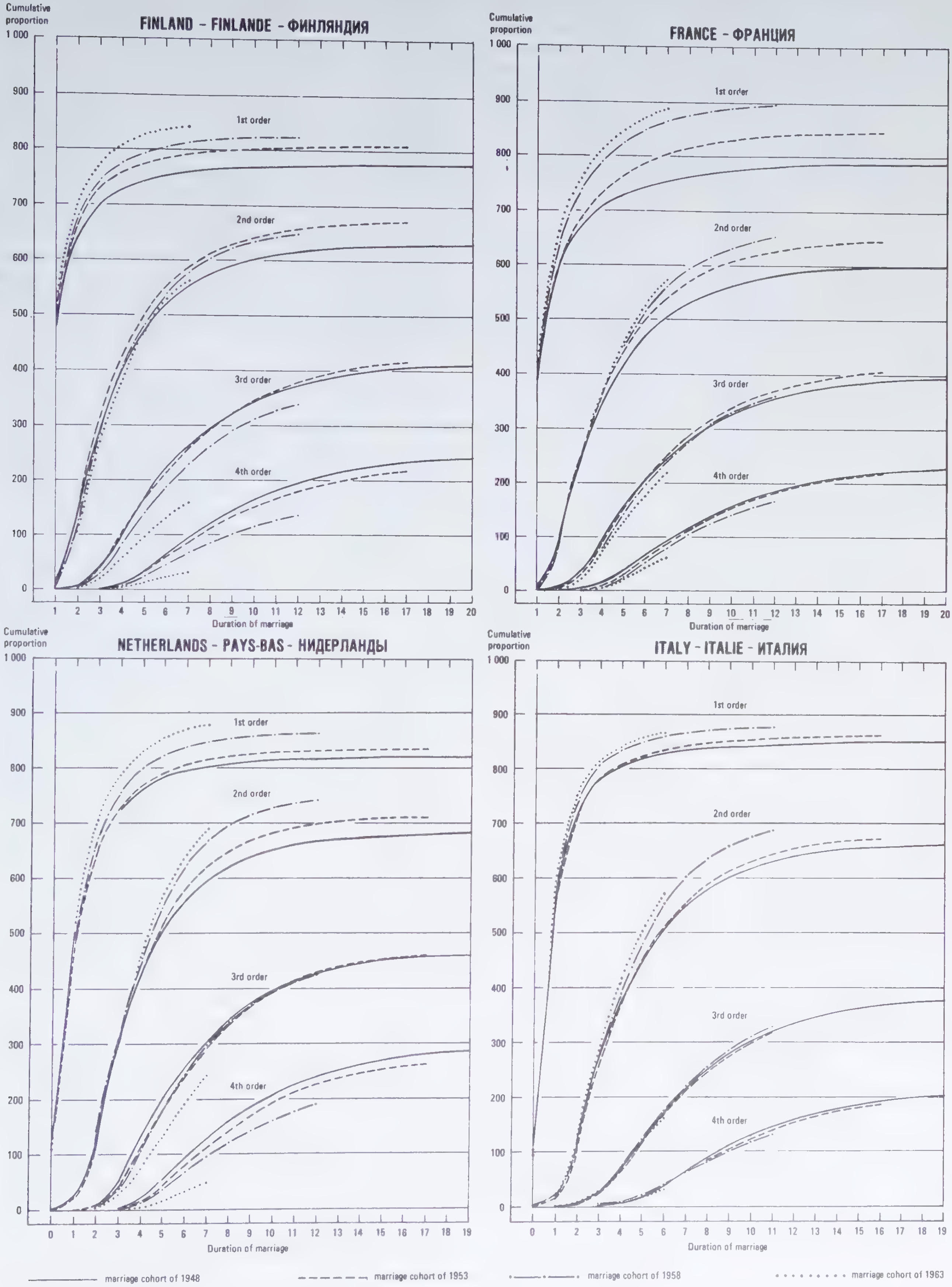
[16] Trends in premarital pregnancies can have an important influence on the timing of first births. See the discussion on illegit[illegible] section 8 belo

[17] This kind of approach can be carried one step further in four countries, including two from eastern Europe, where vital statistics cross-classify birth order against duration since the previous birth (the same data used in calculating the period parity progression ratios). The point of view shifts to that of the parity cohort. Both the ultimate proportion going on to have another birth and the average interval before the additional birth can be estimated for groups of women having births of a given parity in a given year, provided that sufficient time has elapsed so that the greater part of their subsequent experience is known. The procedures are again analogous to those used in calculating the rates presented in appendix table A.V.3, but the problem of underestimation is less severe here, primarily because the time span of interest is relatively short. The resulting fragmentary information does not suggest any trend in either the ultimate proportion of women having one child who go on to have a second or in the average interval between first and second births. Proportions going on from parity two to parity three and from parity three to parity four fall consistently, however, and the average interval between the second and third births tends to be [illegible] of the other two interval

FIGURE 13

Cumulative marital fertility by duration of marriage and birth order for selected marriage cohorts, four selected countries



timing *per se* are presented wherever possible together with figures indicating the proportion of women having thus far experienced the event. Units of time demarcated by live births also include periods taken up by pregnancy wastage (intentional or unintentional foetal deaths). This irrelevant component in the intervals as measured can vary in importance over time and between areas; specifically, declining national levels of pregnancy wastage may result in some apparent shortening of the intervals. Finally, certain kinds of bias which came up in the interpretation of time trends in expectations of completed family size also operate here, and the relationship of duration of marriage to age at marriage is if anything even more important.

The statistics relating to the timing of the first birth, shown in table V.9, are influenced by the different ways in which premarital births were treated in the national surveys. These were excluded in Czechoslovakia, England and Wales, and Yugoslavia and included in Denmark and France and also in Poland but assigned there arbitrarily to a uniform short interval before marriage. Where the data exclude births occurring before marriage, first births will appear to occur later than would otherwise be the case. Nevertheless, the range in both average ages at the birth of the first child and average length of interval from marriage to the birth of the first child is remarkably small. In each of the five countries for which data are available, first births occur quite young, between ages 22½ and 23. This follows marriage by less than 18 months everywhere except in England and Wales where the indicated interval is a little over two years. Such a narrow consensus on the timing of the first birth within marriage brings out the importance of trends in age at marriage as a determinant of period fertility measures.

Trends in the timing of first births can be gauged to some extent from changes among women from longer to shorter durations of marriage. However, the proportion of recently married women who have already had their first birth is insufficient to permit adequate estimation for durations of less than five years. At the same time, the longer durations of marriage are increasingly biased toward early marriage. Changes at the intermediate durations, that is from women married 10-14 years to those married 5-9 years, show a shift toward slightly lower ages at first birth in every country, and usually also toward shorter intervals from marriage to first birth. In England and Wales (where both were exceptionally high to begin with) and in France these variables decline significantly. In other countries, subsequent first births among women married 5-9 years may reduce the ultimate differences to the vanishing point.

The average length of the second interval (from the first birth to the second) is similarly concentrated, approximately three years among women who have been married 10-14 years and hence have already had a majority of the second births they will finally experience. It is also somewhat shorter in England and Wales and in France than elsewhere. Declines in the length of this interval from women married 15-19 years to those married 10-14 years are probably fairly general given the downward bias in the figures for longer duration. Once again, England and Wales stands out in this respect. Furthermore, in both England and Wales and Denmark the declines are almost certainly continuous from previous cohorts. It should be remembered, however, that these births for the most part reflect fertility antedating the surveys by quite a few years.

Both levels and trends for the third and fourth intervals are more uncertain. Relatively small proportions of the eventual total of higher order births have occurred, except for the longest marriage durations, and these in turn are increasingly unrepresentative of the marriage cohort as a whole. At present, average intervals may range from about three to four years for the third interval and from two and a half to three years for the fourth. The enormous drop in both averages between the longest marriage durations in England and Wales, which brings this population more in line with others, is likely to be a valid indication of trends.

Because of the conceptual inter-relationships between birth spacing and the over-all number of births in a family, it is of interest to look at average intervals in the context of measures of family size. Current parity is unsuitable for the purpose because greater numbers of children at any given moment in time must inevitably be the result of shorter average intervals between births. Several of the national surveys included questions on the number of children wanted at the time of marriage, and in so far as this information is reliable in itself, differences in average interval lengths for women initially desiring various parities should suggest whether considerations of eventual family size influence the pace of childbearing. The results documented in the Comparative Fertility Study do bear out the notion that higher numbers of children initially wanted are negatively associated with the length of time between births, especially so in the range from two to four births. When it comes to expectations of total family size, birth intervals are inextricably entangled with actual experience as they are in current parity, but this can be partly overcome by holding current parity constant so as to single out the element in expectations which is as yet unachieved. The data shown in table V.10 indicate consistent declines in the average length of the first and second intervals (except the latter in Yugoslavia) among women who have had only one or two children but expect more. Short of the longitudinal studies, this is probably as close as one can get to firm evidence of an integral strategy in family building behaviour.

Looking at these various sources of information on the timing and spacing of births as a whole, there is very little to suggest that the pace of family building has been decelerating in Europe in the post-war period and considerable evidence that it has actually been speeding up. This development appears to be especially pronounced in northern, western and southern Europe, where it culminated in the middle 1960s. In eastern Europe and more recently in other areas, changes in timing have probably been minor compared with the effect of declining family size.

TABLE V.9

Age at first birth and length of internatal intervals by duration of marriage [a]

(*Average number of years and average number of months*)

Region, country and marriage duration	Average age at 1st birth	Interval length in months				Percentage with birth of order			
		Marriage-1st	1st-2nd	2nd-3rd	3rd-4th	1	2	3	4
Eastern Europe									
Czechoslovakia									
All years	22.5	..	37	40	36	..	60	22	8
0-4 years	22.2	..	24	20[b]	..	..	21	3	..
5-9 years	22.7	..	37	33	27[b]	..	65	16	4
10-14 years	22.9	..	38	44	30	..	81	35	11
15-19 years	22.2[c]	..	42	41	42	..	79	35	15
20+ years	..	..	39	41	39	..	85	52	30
Poland									
All years	23.0	16	37	40	42	..	..	..	..
0-4 years	22.5	12	26	24	41[b]	..	..	..	..
5-9 years	23.1	16	35	32	25	..	..	..	..
10-14 years	23.5[d]	16	40	40	38	..	..	..	..
15-19 years	..	17	37	42	45	..	..	..	..
20+ years	..	18	37	42	43	..	..	..	..
Northern Europe									
Denmark									
All years	22.4	16	37	44	39	87	65	29	10
0-4 years	21.9	11	30	22[b]	..	65	19	3	..
5-9 years	22.5	16	32	29	28[b]	94	72	21	5
10-14 years	22.8	19	37	45	37[b]	96	89	44	10
15-19 years	22.3[c]	17	40	53	45	93	80	49	22
20+ years	..	12	46	44	37[b]	..	82	51	27
England and Wales									
All years	23.0	26	35	40	37	86	60	27	11
0-4 years	21.7	14	20	15[b]	..	64	14	1	..
5-9 years	22.9	24	28	25	22	88	62	20	4
10-14 years	23.7	30	34	35	30	91	75	35	15
15-19 years	23.1[c]	31	41	45	38	..	..	..	..
20+ years	..	29	45	55	50	..	..	..	..
Western Europe									
France									
All years	22.6	17	34	37	..	88	62	32	15
0-4 years	22.1	10	24	19[b]	..	69	19	4	1
5-9 years	22.8	14	33	28	..	95	69	26	9
10-14 years	23.4	20	35	37	..	93	72	38	16
15-19[c] years	22.0	22	36	42	..	94	79	53	29
20+ years	..	21	36	42	..	95	81	54	29
Southern Europe									
Yugoslavia									
All years	..	17	35	36	34	78	55	24	11
0-4 years	..	12	25	24[b]	..	67	18	2	..
5-9 years	..	18	34	30	28	84	61	16	4
10-14 years	..	19	38	37	33	82	65	29	12
15-19[c] years	..	18	39	40	35	82	68	36	19
20+ years	..	20	34	36	37	76	69	41	22

Source: Fertility and Family Planning in Europe around 1970: A Comparative Study of 12 National Surveys (forthcoming in the United Nations Population Studies series).

[a] See table V.6, foot-notes b, c, d, f.

[b] Base less than 50 but more than 10 women.

[c] Duration 15 years or longer.

[d] Duration 10 years or longer.

TABLE V.10

Average length of internatal intervals by number of live births and total number of births expected [a]

(Average number of months)

		Number of live births							
		1		*2*		*3*		*4 or more*	
		Interval length in months		*Interval length in months*		*Interval length in months*		*Interval length in months*	
Region and country	*Total number of births expected*	*Marriage-1st*	*1st-2nd*	*Marriage-1st*	*1st-2nd*	*Marriage-1st*	*1st-2nd*	*Marriage-1st*	*1st-2nd*
Eastern Europe									
Czechoslovakia	0			..	..	..	..	..	..
	1			..	..	..	..	..	..
	2	..		..	43	..	31^b	..	29^b
	3	..		..	37	..	31	..	21^b
	4	..		..	..	..	28^b	..	25
	5 or more	..		..	..	..	..	..	23
Northern Europe									
Denmark	1	26		..	..	..	..	..	..
	2	23		18	45	..	..	..	..
	3	17		15	32	10	34	..	..
	4	15^b		14^b	31^b	9^b	30^b	6	28
	5 or more	..		..	..	..	..	3^b	25
England and Wales	1	40		..	..	..	..	..	..
	2	26		28	41	..	..	..	..
	3	21		21	29	21	32	..	..
	4	14^b		17^b	25^b	16	25	16	29
	5 or more	..		..	..	..	..	14	24
Western Europe									
France	1	30		..	..	..	..	..	..
	2	22		17	43	..	..	..	..
	3	19		10	35	15	30	..	..
	4	11		16	25^b	15	29^b	9	25
Southern Europe									
Yugoslavia	1	21		..	..	..	..	..	..
	2	17		17	42	..	..	..	..
	3	18		18	35	16	31	..	..
	4	24^b		26^b	41	18	30	14	28
	5 or more	..		..	..	..	25^b	17	24

Source: Fertility and Family Planning in Europe around 1970: A Comparative study of 12 National Surveys (forthcoming in the United Nations Population Studies series).

[a] See table V.6, foot-notes *b, c, d, f*.

[b] Base less than 50 but more than 10 women.

8. *Illegitimacy*

In focusing on marital fertility there is an implicit assumption that childbearing within marriage accounts for the vast majority of births. Indeed, this is not at all unrealistic for Europe as a whole, where low levels of illegitimacy have generally prevailed at least since the beginning of the twentieth century. Nevertheless, illegitimate births do contribute something to fertility in all countries and represent significant proportions of total births in a few. Also, given current downward trends in marital fertility and the declines in nuptiality taking place in a few areas, it is possible that illegitimacy might assume greater importance in the future.

A legitimate birth could be defined as one which occurs within the framework provided by society for the care and upbringing of future members. Since it occurs outside this framework, an illegitimate birth has almost always carried the burden of some degree of opprobrium. The number of illegitimate births actually reported, therefore, depends only partly on the numbers and ages of unmarried women and even less on the orientation of society toward childbearing *per se*. It is very largely the product of interaction among a variety of more or less rigidly structured norms of which the most important concern extramarital (usually pre-marital) sexual activity, contraceptive practice among the unmarried, acceptance of abortion and pressure put on the couple to marry before the arrival of the child.[18] Relaxation of the pressure put on couples to legitimize the birth by marrying following conception can give the appearance of rising illegitimacy even when extramarital conception rates remain the same, while improvement in contraceptive services for single women would have the opposite effect without any change in sexual activity. All of these factors vary from one social setting to another reflecting, in part, the extent to which the birth of an illegitimate child is viewed as a problem at that particular time and place. As a result, societies exhibit a wider range of levels and trends in illegitimacy than is true of over-all fertility behaviour, even among the relatively homogeneous cultures of Europe.

Two statistics are widely used in the analysis of illegitimacy: the illegitimacy ratio and the illegitimacy rate. The first of these, giving illegitimate births as a proportion of total births, is available for most European countries over a considerable span of time. The second, the illegitimacy rate, indicates the probability that an unmarried woman in her childbearing years will give birth. The latter has advantages as an analytical tool, but the population estimates underlying the calculation are unfortunately usually available only for census years.

Illegitimacy ratios for European countries from 1946 to 1973 are presented in table V.11. It is immediately apparent that the illegitimate element in current births varies considerably from country to country and also over time. In Iceland, throughout the post-war period, more than one-quarter of all births have been illegitimate, and this level has recently been reached in Sweden as well. The ratio has ranged roughly from 10 to 15 per cent in Austria and the German Democratic Republic. On the other hand, it has been consistently below 2 per cent in the Netherlands and only marginally higher in Belgium, Ireland, Albania and Greece. In general, one can discern areas where the ratios are higher in central and northern Europe and a tendency toward very low ratios in the Catholic and southern countries.

Trends in the ratio also suggest general patterns, although again not without exceptions. Despite elevated over-all birth rates, the ratio of illegitimate to total births was high in many countries following the war and tended to decline in the early post-war years. Everywhere except in southern Europe, the ratios then typically levelled out and entered a rising phase at some point in the decade between 1956 and 1966. This recent acceleration started earliest and has been most pronounced in northern Europe. In contrast, the decline has generally continued up to the present in southern Europe.

The ratios, of course, are partly a function of marriage pattern and marital fertility. If fewer of the population of women of childbearing age are married, or if marital fertility rates decline, the denominator of the illegitimacy ratio will be decreased and the ratio itself will necessarily rise. Or, to turn the proposition around, the proportion of births occurring out of wedlock can move up or down significantly while the probability of an unmarried woman giving birth remains essentially constant. To isolate the phenomenon of illegitimacy from nuptiality and marital fertility, the probabilities themselves must be examined. Illegitimacy rates covering the countries and years for which they are available are given in table V.12.[19]

The picture presented here is dissimilar to that outlined in the ratios in many respects. In parts of northern and western Europe, where the baby boom was a prominent feature of over-all fertility in the 1950s and early 1960s, the rates show little downward movement compared with the ratios. The illegitimacy rate actually rose 50 per cent in England and Wales over the decade of the 1950s while the ratio remained low, for example. In Austria it was the rate which maintained a constant and unusually high level while the ratio declined precipitously from 1949 to 1965. Such diverging trends resulted from the increase in legitimate fertility rates and proportions married which combined to depress the ratios relative to the rates.[20] It is more difficult to piece together very recent trends in the rates. They appear to have risen since 1965 in Norway, Sweden and the United Kingdom. Elsewhere in northern and western Europe rising ratios may well be due entirely to declining legitimate fertility, reinforced in some cases by declining nuptiality, because the rates themselves give relatively little evidence of change. In Czechoslovakia and Hungary both the rates and the ratios have recently been rising slightly, which suggests that illegitimate births are contributing to the rise in over-all fertility. As would be expected, the two measures fit together most satisfactorily in southern Europe where the situation has been most stable in other respects.

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[18] For an expanded discussion of the phenomenon of illegitimacy in the context of a world-wide comparative study, see S. Foster Hartley, *Illegitimacy* (University of Chicago Press, forthcoming), also Phillips Cutright, "Economic events and illegitimacy in developed countries", *Journal of Comparative Family Studies* (Calgary), No. 2, Spring, 1971. Section D of this chapter takes up contraception and abortion in relation to marital fertility.

[19] This rate, known more exactly as the general illegitimate fertility rate, relates illegitimate births to unmarried women in their childbearing years. Since its purpose is to measure the probability of illegitimate childbearing, the denominator should theoretically include all women at risk, i.e. all women engaging in extra-marital sexual intercourse. In practice, one is limited to published tabulations of women by age and marital status; the rates given here are based on the total of never-married, widowed, divorced and in some cases separated women between the ages of 15 and 44. In most countries, births to married women would be registered as legitimate whether or not fathered by the husband; thus any illegitimate births to married women would also be excluded from the numerator. Strictly speaking, the general illegitimate fertility rate does not take into account the age distribution of women within the childbearing years. Cutright, *loc. cit.*, has documented the fact that age-specific illegitimacy rates vary considerably from one age group to another, hence changes in nuptiality, which are the primary determinant of changes in the age distribution of unmarried women, can actually affect illegitimacy rates as well as ratios. The effect on the rates would nevertheless be small by comparison.

[20] The long-term trend of illegitimate fertility in Europe i documented in E. Shorter, J. Knodel and E. Van de Valle, "The decline of non-marital fertility in Europe 1880-1940", *Populati Studies* (London), vol. 25, No. 3 (November 1971). Using an index of illegitimate fertility (I_h) that is again independent of nuptiality and marital fertility, these authors show that illegitimate fertility declined parallel to legitimate fertility throughout Europe from the latter part of the nineteenth century to the 1930s. Although the index subsequently rose in a number of northern and western countries, by 1960 it had in no case reached its initial high le

Table V.11

Illegitimacy ratios, 1946-1973 [a]

(Percentage of all births registered as illegitimate)

Region and country	*1946*	*1947*	*1948*	*1949*	*1950*	*1951*	*1952*	*1953*	*1954*	*1955*	*1956*	*1957*	*1958*	*1959*
Eastern Europe														
Bulgaria	..	..	..	2.6	2.0	2.5	2.1	3.7	4.8	6.4	7.2	7.4	7.6	7.7
Czechoslovakia	8.9	8.5	7.6	6.5	6.0	5.4	5.0	5.1	5.3	5.3	5.4	5.4	5.1	4.9
German Democratic Republic	..	..	..	11.9	12.8	13.2	13.0	13.0	13.2	13.0	13.2	13.2	12.4	12.0
Hungary	8.1	..	..	8.3	8.5	8.4	8.1	8.2	7.8	7.0	6.6	6.4	5.7	5.7
Poland	..	..	..	..	..	..	..	..	..	4.7	5.6	5.3	5.2	5.0
Northern Europe														
Denmark	7.9	8.0	7.7	7.4	7.4	7.0	6.8	6.9	6.7	6.6	6.8	6.9	7.2	7.3
Finland	6.0	5.6	5.6	5.5	5.2	4.9	4.7	4.5	4.4	4.2	4.2	4.3	4.0	4.1
Iceland	25.9	25.6	26.6	25.2	27.9	27.3	25.8	25.5	27.6	27.1	25.1	24.9	25.5	25.4
Ireland	3.9	3.4	3.3	3.1	2.5	2.5	2.5	2.1	2.1	2.0	1.9	1.7	1.6	1.6
Norway	5.8	4.9	4.0	4.3	4.1	4.0	3.7	3.6	3.5	3.4	3.5	3.5	3.6	3.6
Sweden	9.3	9.4	9.3	9.4	9.8	10.1	9.9	9.7	9.8	9.9	10.2	10.1	10.2	10.4
United Kingdom:														
England and Wales	6.6	5.3	5.4	5.1	5.1	4.8	4.8	4.7	4.7	4.7	4.8	4.8	4.9	5.1
Northern Ireland	4.4	3.8	3.6	3.7	3.4	3.1	3.3	2.8	2.9	2.4	2.7	2.4	2.3	2.4
Scotland	6.6	5.6	5.8	5.5	5.2	5.1	4.8	4.7	4.5	4.3	4.3	4.1	4.1	4.2
Western Europe														
Austria	24.5	20.2	19.1	18.9	18.3	17.6	16.5	15.9	15.5	14.4	13.5	13.3	13.2	13.3
Belgium	3.8	3.1	3.1	2.7	2.6	2.3	2.3	2.2	2.1	2.1	2.1	2.0	2.0	2.1
France	8.7	7.6	7.2	7.0	7.0	6.8	6.7	6.7	6.6	6.4	6.3	6.2	6.1	6.1
Germany, Federal Republic of	16.4	11.9	10.2	9.3	9.7	9.6	9.0	8.7	8.4	7.9	7.5	7.2	6.8	6.7
Luxembourg	..	..	..	3.8	3.4	3.9	3.7	3.4	2.9	2.8	3.0	3.0	3.0	3.1
Netherlands	2.5	1.9	1.7	1.6	1.5	1.4	1.4	1.3	1.3	1.2	1.2	1.2	1.2	1.4
Switzerland	3.4	3.5	3.7	3.6	3.8	3.5	3.5	3.6	3.7	3.6	3.7	3.8	3.6	3.8
Southern Europe														
Greece	..	..	..	..	3.1	..	..	..	..	1.5	1.5	1.5	1.3	1.3
Italy	3.8	3.7	3.5	3.4	3.4	3.4	3.4	3.3	3.2	3.1	3.0	2.8	2.7	2.5
Malta	..	..	..	..	..	..	1.0	0.8	0.9	1.0	0.7	0.7	0.7	0.6
Portugal	12.3	12.1	11.8	11.8	11.8	11.6	11.5	11.2	10.9	11.0	10.6	10.6	10.5	10.1
Spain	6.2	5.5	5.7	5.7	5.2	5.2	5.1	4.8	4.6	4.2	3.8	3.3	2.9	2.4
Yugoslavia	..	..	..	..	6.6	6.2	6.0	7.0	7.4	7.7	8.2	8.8	8.9	8.7

Region and country	*1960*	*1961*	*1962*	*1963*	*1964*	*1965*	*1966*	*1967*	*1968*	*1969*	*1970*	*1971*	*1972*	*1973*
Eastern Europe														
Bulgaria	8.0	8.0	8.1	8.4	8.8	9.4	9.6	9.7	9.6	..	..	..	..	..
Czechoslovakia	4.8	4.5	4.5	4.7	4.9	5.1	5.3	5.4	5.6	5.7	5.8	5.6	..	..
German Democratic Republic	11.6	11.3	10.1	9.3	9.4	9.8	10.00	10.7	11.5	12.4	13.3	15.1	16.2	..
Hungary	5.5	5.5	5.4	5.3	5.2	5.2	5.1	5.0	5.0	5.2	5.4	5.8	6.0	..
Poland	4.5	4.3	4.2	4.1	4.1	4.5	4.6	4.9	4.9	..	..	..	4.9	..
Northern Europe														
Denmark	7.8	8.0	8.3	8.9	9.3	9.5	10.2	11.1	11.1	11.3	11.0	12.3	14.4	..
Finland	4.0	4.1	4.0	4.2	4.4	4.6	4.8	5.1	5.3	5.6	5.8	5.5	..	..
Iceland	25.3	25.3	24.5	25.1	26.7	26.9	28.4	30.0	..	..	..	..	..	..
Ireland	1.6	1.6	1.8	1.8	2.0	2.2	2.3	2.5	2.6	2.6	2.7	..	..	..
Norway	3.7	3.7	3.8	3.9	4.2	4.6	4.9	5.1	5.6	6.2	6.9	7.9	8.7	9.1
Sweden	11.3	11.7	12.4	12.6	13.1	13.8	14.6	15.1	15.8	16.3	18.4	21.6	25.1	..
United Kingdom:														
England and Wales	5.4	6.0	6.6	6.9	7.2	7.7	7.9	8.4	8.5	8.4	8.3	8.4	8.6	..
Northern Ireland	2.5	2.5	2.4	2.7	3.0	2.9	3.1	3.6	3.6	3.7	3.8	3.8	4.2	..
Scotland	4.4	4.6	4.8	5.2	5.4	5.8	6.4	6.9	7.4	7.5	7.7	8.1	8.5	..
Western Europe														
Austria	13.0	12.6	12.0	11.6	11.3	11.2	11.4	11.5	12.0	12.2	12.8	13.0	13.7	13.7
Belgium	2.1	2.0	2.1	2.2	2.3	2.4	2.5	2.5	2.7	2.7	2.8	..	..	..
France	6.1	5.9	5.9	5.9	5.9	5.9	5.9	6.1	6.4	6.5	6.8	7.0	..	..
Germany, Federal Republic of	6.3	6.0	5.6	5.2	5.0	4.7	4.6	4.6	4.8	5.0	5.5	5.8	6.0	6.3
Luxembourg	3.2	3.4	3.1	3.1	3.2	3.7	3.2	3.5	3.2	3.0	4.0	3.9	4.2	..
Netherlands	1.3	1.4	1.5	1.6	1.7	1.8	2.0	2.1	2.0	2.2	2.1	2.0	1.9	..
Switzerland	3.8	4.0	4.2	4.1	4.2	3.9	3.8	3.9	3.8	3.8	3.8	3.7	3.7	3.8
Southern Europe														
Greece	1.2	1.2	1.2	1.2	1.1	1.1	1.0	1.0	1.1	1.1	1.1	1.2	1.2	1.3
Italy	2.4	2.4	2.2	2.2	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.4	2.5	2.8
Malta	0.7	0.7	0.9	1.0	1.2	1.0	1.1	1.3	1.6	1.4	1.5	1.1	1.3	..
Portugal	10.0	9.3	9.0	8.7	8.4	8.3	8.1	7.9	7.4	7.3	7.2	7.3	7.1	7.2
Spain	2.3	2.3	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.4	1.4	1.4	1.4	..
Yugoslavia	8.7	8.4	8.2	8.5	8.4	8.3	8.3	8.3	8.7	8.5	8.5	8.1	8.1	..

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[a] All data for 1946 to 1948 and for Greece 1950 and 1955 taken from Shirley Foster Hartley, *Illegitimacy* (University of California Press; in press).

TABLE V.12

Illegitimacy rates, 1950-1970 [a, b]

(Illegitimate births per 1,000 unmarried women 15-44)

Region and country	*1950*		*1960*	*1965*	*1970*
Eastern Europe					
Bulgaria	23.6[c, e]	..	..	25.1[c]	..
Czechoslovakia	17.3[e]	..	11.3	11.9	12.7
German Democratic Republic	..	..	..	37.0[d]	31.9
Hungary	20.0	..	12.5	10.1	11.6
Poland	19.8[c]	..	12.7[c]	..	8.8[c]
Northern Europe					
Denmark	17.9		17.6	22.6	21.0
Finland	12.5		8.4	8.0	8.7
Ireland	4.7		3.6	5.2	..
Norway	8.6		8.9	..	16.2
Sweden	20.1		20.3	27.7	32.8[c]
United Kingdom:					
England and Wales	10.2		15.1	20.5	24.7
Scotland	9.9		11.5	15.5	20.9
Western Europe					
Austria	25.5		27.2	..	26.3
Belgium	6.4		5.6	..	6.4
France	17.4		15.9	14.6	14.9
Germany, Federal Republic of	14.8		12.1	11.4	
Netherlands	3.5		3.6	4.4	5.0
Switzerland	6.4		7.1	8.2	7.1
Southern Europe					
Greece			2.2	..	2.4
Italy	5.8		5.0	..	..
Portugal	24.6		23.6	19.7	..
Spain	7.8		4.7	..	..
Yugoslavia	..		14.8	..	19.6

[a] All data from 1965 and earlier, except Poland 1950 and 1960, German Democratic Republic 1965 and Ireland 1965, taken from Phillips Cutright, "Economic events and illegitimacy in developed countries", *Journal of Comparative Family Studies*, Calgary, 2, Spring 1971, appendix 1. Data for Poland taken from Zbigniew Smolinski, "Malzenska i pozamalzenska plodnosc kobiet", *Wladomosci Statystyczne*, No. 10, 1973. All remaining data, except those for the Netherlands 1970, estimates prepared by the ECE secretariat.

[b] Years indicated are approximate.

[c] Based on women aged 15-49.

[d] Based on women aged 18-44.

[e] 1955.

Illegitimate births to teenagers have been a matter of special concern in many countries since the consequences are particularly likely to be negative for both mother and child. Age-specific illegitimate fertility rates show that the probabilities of childbearing are far greater for unmarried women from ages 20 to 24 than for women under age 20.[21] Because relatively few women under age 20 are married, however, the resulting numbers of births to very young women can be disproportionately high. Each of the factors affecting the rates, sexual activity, contraception and abortion and legitimization by marriage before the birth, probably has a different impact on teenagers compared with older women in any given society.

Regardless of the ages involved, one can only speculate for the most part on how the international comparisons drawn here have been shaped by differences in the underlying factors. Low levels of illegitimacy achieved in some of the more traditional countries of southern Europe could be the combined result of lower levels of extramarital sexual activity, high probabilities of marriage when an illegitimate conception is discovered, and fairly frequent resort to abortion. The differences in nuptiality and marital fertility which also distinguish southern Europe are certainly not such as to explain the prevailing pattern of low illegitimacy. In Norway, Sweden and the United Kingdom, on the other hand, the ratios began to rise in the 1950s well before over-all period fertility began to fall and both the rates and the ratios have risen sharply recently. One suspects that here high frequencies of extramarital relations work together with low probabilities of marriage following conception. Indeed, the trend toward decreasing probabilities of legitimization through marriage before the arrival of the child can be clearly documented in the case of England and Wales.[22] The surprising element is that advantage is not systematically taken of relatively easy access to contraception and abortion. Perhaps illegitimacy itself simply presents less and less of a problem to everyone concerned. Social services in these countries are such that illegitimate children and their mothers may face opportunities not so very different from everyone else. Since 1970 Sweden's illegitimacy ratio has risen more dramatically than that of any other country while the crude marriage rate has plummeted and total births have not declined significantly. Under such circumstances, where children are frequently born to unions less formal than marriage and a major part of the responsibility for their upbringing is assumed by the state, the fact of illegitimacy could become largely irrelevant.

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[21] See Cutright, *loc. cit.*

C. Fertility differentials

On the whole, fertility has taken a downward course in Europe since the Second World War; its path has varied considerably, however, from country to country and national levels and trends frequently reflect the balance of substantial differences in fertility behaviour which exist within countries. The study of internal differentials thus helps to explain certain aspects of the international contrast outlined above. More importantly, it contributes to our understanding of the psycho-social motivations and socio-economic mechanisms which have led to the evergrowing prevalence of small families and gives an indication of the potential for further fertility declines.

In this section only three of the principal dimensions of fertility differentials are examined: geographic variations within countries based on urban/rural and regional divisions, and the influence of wife's education and employment status. These selected characteristics appear to have general significance throughout Europe, and they carry important implications for future developments as well. Moreover, other correlates of fertility frequently overlap to a greater or lesser extent with those examined here: religion with place of residence, for instance, and income and social status with education.[23]

1. *Residence*

A fundamental shift from rural to urban ways of life is one of the principal features of the total modernization process. A considerable body of evidence has been amassed to show that changes in fertility patterns have proceeded at different rates in the two sectors and that rural fertility has almost always been higher than urban fertility. This conclusion is broadly valid even though there is no generally agreed upon definition of urban as opposed to rural population divisions, and differences in age structure, marital status and socio-economic variables frequently distort those comparisons for which documentation is available. It follows that the urbanization process itself has tended to lower the over-all fertility levels.

The series of crude birth rates for 1964-1972 collected in table V.13 indicate wide variability in the urban/rural comparison. In countries where the urbanization process has got under way quite recently and is occurring at a rapid pace, migration is especially likely to have altered population composition by age and marital status in the two sectors; this often has the effect of elevating urban crude rates relative to rural, because migrant streams are typically heavily weighted toward young adults. Moreover, there is some evidence to the effect that urban in-migrants retain to a certain extent their rural fertility characteristics. Finally, these data make clear that urban and rural rates have been moving together, and the prevailing direction of the movement has been downward except in those countries of eastern Europe where the over-all crude rates have recently risen.

In the majority of cases, the recorded rates are higher in rural than in urban areas. The greatest differential is found in Albania where the beginning of over-all decline is apparently due entirely to falling urban rates. Large differences in favour of rural areas also characterize Poland, Romania (at least up to the abrupt break of 1967 and now reappearing), the Netherlands and the USSR. For Bulgaria, it has been shown that the decline in the ratio of rural to urban crude birth rates from its earlier high level to approximately unity in the mid-1960s was due primarily to changes in age structure stemming from the flow of young people into the towns; and it would appear that for similar reasons the true urban/rural differential is understated in the crude birth rates for most countries of eastern Europe and for the USSR, the true ratio being of the order of 1.5 to 1.0.[24] Indeed, age-specific fertility rates for the USSR for 1971-1972 indicate a ratio of 1.7 to 1.0 in the total fertility rates (table V.14). The excess of rural over urban fertility increases very sharply with age, rising from 50 per cent for women in their twenties to 150 per cent for women aged 35-39. Family limitation thus appears to have had a limited impact as yet in the rural areas of the USSR while current urban fertility verges on insufficient births to replace present generations. Although the differential in the crude rates for England and Wales tips marginally in favour of urban areas, Glass has demonstrated on the basis of statistics taken from 1961 census that a small inverse relationship between cumulated marital fertility and size of place still existed at least as recently as that year.[25] His study also indicate somewhat larger differentials in the same direction for Norway and the Federal Republic of Germany in the early 1960s. Finally, similar data presented by Taba for France follow an identical pattern.[26] Greater London

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[22] Hartley, *op. cit.*

[23] The Comparative Fertility Study, provides a fuller picture of socio-economic fertility differentials in 12 countries of the region with regard to urban/rural place of birth of wife, religion and intensity of religious feeling, socio-economic status of husband and his educational attainment, and family income.

[24] Berent, *loc. cit.*, pp. 250-253.

[25] Glass, *loc. cit.*, p. 121.

[26] Tabah, *op. cit.*, p. 41.

TABLE V.13

Crude birth rates by urban/rural residence, 1964-1972

(Annual number of births per 1,000 population in urban and rural areas)

Region and country	1964		1965		1966		1967		1968		1969		1970		1971		1972	
	Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
Eastern Europe																		
Bulgaria	15.6	16.4	14.7	15.9	15.5	14.4	15.9	14.2	18.0	15.9	18.7	15.2	18.0	14.6	17.4	14.1	17.0	13.3
German Democratic Republic	..	..	..	..	..	..	..	..	..	..	..	..	14.1	13.4	13.8	13.6	11.6	12.1
Hungary	..	..	..	..	12.1	14.8	13.5	15.4	14.1	15.8	14.3	15.5	13.8	15.5	13.4	15.6	13.6	15.6
Poland	15.5	20.5	14.9	19.7	14.4	19.1	13.9	18.7	13.8	18.7	14.1	18.7	14.7	19.1	15.0	19.5	15.5	19.5
Romania	12.7	16.4	12.1	15.9	11.5	16.1	26.9	27.6	25.8	27.2	21.5	24.5	18.9	22.6	17.3	21.1	16.8	20.3
Northern Europe																		
Denmark	..	..	16.9	19.0	17.4	19.2	..	..	14.3	16.2	13.7	15.3	..	..	..	..	..	..
Finland[a]	..	..	..	..	18.8	15.1	18.5	14.8	17.5	14.0	15.8	12.9	15.5	12.4	14.7	11.7	14.1	11.2
Norway	16.4	18.7	18.1	17.6	17.1	18.4	16.9	18.2	17.2	17.9	17.0	18.1	16.1	17.1	..	..	16.4	16.3
United Kingdom:																		
England and Wales	18.6	18.2	18.1	17.9	17.6	17.3	17.2	17.0	16.9	16.6	16.3	16.3	16.0	15.9	16.1	16.0	..	..
Northern Ireland	..	..	..	..	22.3	22.5	22.2	22.7	21.9	22.3	..	..	..	..	..	..	..	..
Scotland	20.3	19.4	19.5	18.9	18.8	18.1	18.6	18.4	18.3	18.2	17.4	17.4	16.8	16.9	..	..	..	..
Western Europe																		
Netherlands	..	..	..	..	17.3	21.3	16.9	21.2	16.8	20.7	17.4	22.1[b]	16.8	20.6[b]	..	..	..	..
Southern Europe																		
Albania	29.6	41.9	27.1	39.3	26.6	37.8	24.9	40.4	24.3	41.3	24.4	40.8	22.3	37.7	24.2	37.9	..	..
Greece[c]	..	..	..	..	..	..	..	..	..	..	..	..	..	..	16.7	15.4	..	..
USSR	17.3	22.0	16.2	21.0	16.0	20.7	15.5	19.7	15.3	19.5	15.6	18.7	16.4	18.7	16.9	19.2	16.9	19.0

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[a] Before 1971 the definition of urban referred to non-administrative agglomerations; for 1971 and after it refers to urban communes.

[b] Before 1969 semi-urban areas are included in the rural category. For 1969 and 1970 the rates for this category are given separately as 20.6 and 19.4 respectively.

[c] The statistics include a semi-urban category for which the rate was 15.7 in 1971.

TABLE V.14

General fertility rate, ASFRs, and total fertility rate for the USSR by urban/rural residence and by republic, 1971-1972

(Annual number of births per 1,000 women 15-49, per 1,000 women of given age, and average births per woman)

	General fertility rate	Age-specific rates							Total fertility rate
		Less than 20	20-24	25-29	30-34	35-39	40-44	45-49	
USSR	67.2	32.4	173.9	137.1	84.3	49.4	14.6	2.0	2.47
Towns	57.9	30.2	150.5	116.7	66.0	31.8	6.8	0.7	2.02
Villages	83.5	36.1	231.5	179.2	118.6	76.8	26.3	4.1	3.36
Russian Soviet Federated Socialist Republic	55.2	30.9	156.1	116.3	65.6	33.0	7.9	0.7	2.05
Ukrainian SSR	57.1	36.1	169.6	114.8	65.3	31.6	6.6	0.5	2.12
Byelorussian SSR	61.1	23.5	172.3	137.7	82.1	40.4	10.6	0.8	2.34
Uzbek SSR	159.5	42.6	276.1	287.6	243.9	192.2	90.1	19.6	5.76
Kazakh SSR	95.7	29.8	200.3	187.2	130.4	88.5	30.5	6.5	3.37
Georgian SSR	70.8	33.7	183.5	155.7	90.7	44.4	12.0	2.2	2.61
Azerbaijan SSR	119.1	29.1	226.1	228.7	188.0	133.4	46.8	8.1	4.30
Lithuanian SSR	66.1	23.2	165.2	137.9	87.4	45.5	14.7	1.3	2.38
Moldavian SSR	75.4	29.9	181.4	136.6	98.7	59.0	18.6	1.7	2.63
Latvian SSR	54.8	26.6	147.5	118.5	69.6	32.0	7.2	0.5	2.05
Kirghiz SSR	136.1	40.5	268.5	248.8	196.8	153.4	70.6	15.0	4.97
Tadzhik SSR	171.9	44.4	288.0	274.7	259.1	222.2	112.3	29.9	6.15
Armenian SSR	90.0	38.8	215.1	181.8	108.0	65.2	21.6	3.4	3.17
Turkmen SSR	161.8	29.2	268.5	296.2	246.8	207.3	106.6	26.0	5.90
Estonian SSR	59.8	31.5	165.9	130.7	70.3	31.9	6.7	0.5	2.19

and Paris stand out particularly for their low levels of childbearing; women in London married 15-19 years in 1961 had 1.9 children while Parisian women married 15 years in 1962 had only 1.6 children on the average.

To these observations can be added the findings of the Comparative Fertility Study. The average number of births expected declines quite regularly with increasing size of place in the seven countries for which the information is available (table V.15). These figures have been standardized by duration of marriage, thus reducing to a minimum distortion from that source. The range of differences is much greater, on the order of one child, for Poland and Yugoslavia where both fertility decline and urbanization are of relatively recent origin, indicating considerable scope for continued decline in national fertility levels for these countries. In France on the other hand, where the fertility decline had reached an advanced stage before the Second World War and demographic conditions have been relatively stable in the ensuing period, the difference is only about one-quarter of a child. The level of expectations in large towns and cities is actually close to replacement everywhere but noticeably lower in the eastern and southern countries represented than in the northern and western ones. Although it must be recognized that the various biases inherent in the expectations data probably affect urban and rural expectations differently, time trends derived from the detailed averages by duration of marriage (not shown) suggest that the magnitude of the over-all differential is diminishing as time goes on, as a result of more rapidly declining expectations in smaller localities. Among recently married women it is approaching zero in the western countries. The survey data on birth intervals for women residing in localities of different size also give evidence of more rapid family formation among rural women, at least as far as the interval from marriage to the birth of the first child is concerned.

Apart from the urban/rural spectrum, many nations include within their boundaries geographic divisions which are diverse with respect to their economic, social and cultural background. Urbanization and industrial development are typically one facet of such regional contrasts, but ethnic and religious characteristics are frequently of equal or greater importance. Possible differences in fertility behaviour among sub-populations can be of special interest because differential rates of growth imply change in the composition of the total population. An exhaustive review of regional variations within European countries is not attempted here but rather a few examples are offered which illustrate the possibilities and represent the most important instances for which documentation is available.

Italy is a case where variations between the northern and southern parts of the country primarily reflect different stages in the modernization process. Fertility began to decline in the north in the latter half of the nineteenth century and subsequently followed a path similar to that in other parts of western Europe. In the south, the process began only very recently, with the result that regional differentials were large through the first half of the twentieth century. At the time of the 1961 census, this differential was still very marked, but a comparison of cumulated numbers of live births achieved by 39 years of age between birth cohorts of 1906-1911 and 1926-1931 shows that it was significantly smaller for the younger cohorts, due mainly to declines

TABLE V.15

Total number of births expected by size of place of residence, educational level of wife and employment status of wife

(Averages standardized by duration of marriage)

Region and country	Size of place of residence					Educational level of wife					Employment status of wife		
	Village	Small town	Medium town	Big town	City	Less than elementary	Element-ary	Lower secondary	Higher secondary	Post-secondary	Working now	Worked before not now	Never worked
Eastern Europe													
Czechoslovakia	..	..	..	..		2.64		2.13		2.11	2.28	3.01	
Hungary	2.35	2.30	2.18	2.00	1.70	3.61	2.54	2.15	1.86	1.85	2.00	2.38	
Poland	3.12	2.56	2.36	2.21	1.90	3.12	3.26	2.80	2.25	2.00	2.59	2.58	2.88
Northern Europe													
Denmark	2.75	2.51		2.33		2.57		2.36	2.48	2.65	2.47	2.64	
Finland	2.79	2.40	2.52	2.12	2.22	2.64		2.22		2.47	2.43	2.61	3.08
England and Wales	..	..	..	..	..	2.20			2.10	2.09	1.86	2.33	2.65
Western Europe													
Belgium	2.67	2.44	2.22	2.14		3.29[a]	2.48	2.46	2.37	2.84[a]	1.95	2.56	2.92
France	2.67	2.63	2.52	2.39	2.43	4.07[a]	2.66	2.32	2.39	2.40	2.11	2.71	2.78
Southern Europe													
Yugoslavia	2.88	2.23	2.36	2.21	1.93	3.44	2.50	2.30	1.92	1.87	2.23	2.73	

Source: Fertility and Family Planning in Europe around 1970: A Comparative Study of 12 National Surveys.

[a] Base less than 50 but more than 10 women.

in the south where fertility has been highest. The extreme ratios were 2.7 to 1.0 and 2.0 to 1.0 for the older and younger cohorts respectively. A survey permitting analysis by marriage cohorts brought out the further interesting point that in the rural south fertility decline was continuous starting with the cohort of 1950-1954, while in the industrial areas and in the north the cohort of 1955-1959 has higher fertility than its predecessors, thus contributing also to the diminution of the differential.[27] Very much the same variety of patterns that was attributed earlier to different parts of Europe apparently existed even within Italy alone.

Regional variation in the Netherlands encompasses both religion and urban-industrial dimensions. In 1960 fertility was lowest in the Protestant and industrial provinces and highest in the Catholic and rural parts of the country; the extreme ratio was 1.2 to 1.0 in the crude birth rates and 1.3 to 1.0 in the general fertility rates. By 1968 both measures had declined in all provinces but distinctly more so among the second group. Once again, the effect was a reduction in the over-all differential.[28]

Religion and economic structure are likewise principal distinguishing features of the two sub-regions of Czechoslovakia, and fertility differentials have similarly favoured rural and Catholic Slovakia over the more industrialized and Protestant Czech lands. Through the 1950s and early 1960s the crude birth rate was approximately 45 per cent higher in the former with approximately equal declines recorded in each area. After 1965, the decline levelled out in the Czech lands but continued in Slovakia, reducing the differential to some 25 per cent.[29] Since 1967, the Czech lands have figured disproportionately in the rise in the national birth rate, causing still further attenuation of the differential.

Of the countries included in this study the two which contained the greatest internal contrasts are unquestionably Yugoslavia and the USSR. Both these countries include within their boundaries sub-populations which vary much more widely with respect to economic and religious background than is true of other European countries, and these differences are associated with a whole range of deep-seated ethnic and cultural characteristics. Not surprisingly, such heterogeneity is reflected also in fertility patterns; in both countries the maximum ratio among fertility indicators for their respective constituent republics has been as much as 3 to 1 in recent years, thereby encompassing virtually the entire gamut of national fertility levels on the global level.

Crude birth rates for the republics of Yugoslavia varied from just over 20 to just over 40 in the early 1950s (table V.16). Since then the gap has widened due to decline in those republics where the birth rate was already lower and the maintenance of a high rate in Kosovo. Bordering on Albania, Kosovo is primarily agricultural, Muslim in religion and characterized by a lively sense of local identity. Other republics, where fertility was high after the war, have experienced declines in their crude birth rate of at least 40 per cent, bringing them much closer to the economically and socially more advanced regions of Croatia, Slovenia and Vojvodina.

TABLE V.16

Crude birth rates for Yugoslavia by republic, 1953-1973

(Annual number of births per 1,000 population in each republic)

	1953	*1958*	*1963*	*1968*	*1969*	*1970*	*1971*	*1972*	*1973*
Yugoslavia	28.4	24.0	21.4	19.1	18.9	17.8	18.3	18.3	18.0
Bosnia and Herzegovina	38.5	35.3	30.7	24.6	23.9	21.4	22.0	21.5	19.8
Montenegro	32.9	30.2	26.7	21.4	21.7	20.3	20.5	20.3	17.2
Croatia	22.9	19.0	16.5	14.9	14.5	13.9	14.6	14.8	15.1
Macedonia	37.9	32.7	28.4	25.4	25.1	23.2	22.9	22.7	22.2
Slovenia	22.4	18.1	18.0	16.9	16.3	16.0	16.3	16.5	17.5
Serbia:									
Total	26.6	21.2	19.1	18.0	18.3	17.5	17.9	18.1	18.0
Serbia proper	25.3	18.7	16.0	14.8	15.2	14.8	14.8	15.1	15.5
Vojvodina	22.4	16.6	15.6	14.1	13.6	13.0	13.4	13.6	13.3
Kosovo	42.6	44.1	40.7	38.5	39.1	36.5	37.5	37.1	35.3

Similarly, in the early post-war years, crude birth rates were already well below 25 for European populations in the western part of the USSR, while they ranged into the upper 30s in the eastern and southern Asiatic republics (table V.17). The extreme differential between the republics was in the ratio of 2.5 to 1.0 in this period and remained at about this level into the 1950s, although the rates themselves generally began to decline after 1960. Large-scale migration from west to east had a substantial impact on the crude rates in some areas.

The refined rates for 1971-1972 shown in table V.14 present the recent contrasts among the Soviet Republics free from distortion due to age structure. Total fertility varied considerably more than the crude birth rate, and the underlying age-specific rates reveal significant differences in the age pattern of fertility. The age curve is highly peaked in the Russian Soviet Federated Socialist Republic, the Ukraine, Latvia and Estonia where total fertility was low and women 20-24 contributed nearly 40 per cent of this total. The same age group contributed less than 25 per cent in Uzbekistan, Tadzhikistan and

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[27] Tabah, *op. cit.*, p. 33.

[28] Tabah, *op. cit.*, pp. 34-35.

[29] Berent, *loc. cit.*, p. 255.

TABLE V.17

Crude birth rates for the USSR by republic, 1950-1973

(Annual number of births per 1,000 population in each republic)

	1950	*1960*	*1965*	*1970*	*1973*
USSR	26.7	24.9	18.4	17.4	17.6
Russian Soviet Federated Socialist Republic	26.9	23.2	15.7	14.6	15.1
Ukrainian SSR	22.8	20.5	15.3	15.2	14.9
Byelorussian SSR	25.5	24.5	17.9	16.2	15.7
Uzbek SSR	30.9	39.9	34.7	33.6	33.7
Kazakh SSR	37.6	36.7	26.9	23.4	23.2
Georgian SSR	23.5	24.7	21.2	19.2	18.2
Azerbaijan SSR	31.2	42.6	36.6	29.2	25.4
Lithuanian SSR	23.6	22.5	18.1	17.6	16.0
Moldavian SSR	38.9	29.2	20.4	19.4	20.4
Latvian SSR	17.0	16.7	13.8	14.5	13.9
Kirghiz SSR	32.4	36.8	31.4	30.5	30.6
Tadzhik SSR	30.4	33.5	36.8	34.8	35.6
Armenian SSR	32.1	40.3	28.6	22.1	22.1
Turkmen SSR	38.2	42.4	37.2	35.2	34.3
Estonian SSR	18.4	16.6	14.6	15.8	15.0

Turkmenistan where total fertility was much higher, and the rates for women in their early forties were still considerable. These striking differences provide evidence of ample scope for further decline in national fertility rates above and beyond the implied urban/rural differential.

2. *Women's education and employment status*

Since activity outside the home almost always represents an alternative to family life for women in modern society, women's education and employment status are potentially key variables in determining fertility patterns. Not only is there ample evidence that strong relationships exist, but there have also been far-reaching changes in the distribution of women according to these characteristics within European populations in the post-war period. Levels of education have risen everywhere as has female participation in the labour force; both phenomena have been particularly salient features of social and economic change in the socialist countries of eastern Europe.[30] With the growing stress on equal status for women in all facets of life, it seems likely that these forces will continue to be important in the future.

The association between educational level and fertility has traditionally been a strongly negative one: women with little education typically have had larger families than those who reached higher levels. In recent years, however, a tendency has emerged in several western countries for the relationship to become positive at the upper end of the educational scale, producing a reversed J-shaped curve rather than a simple linear regression.[31]

In eastern Europe and the USSR, a strong negative association between these variables appears to have continued fairly well to the present. A variety of fertility indicators for Bulgaria, Hungary, Poland, Romania and parts of the USSR suggest differentials in terms of completed family size in a ratio probably of more than 2 to 1 between women with no schooling and women with higher than secondary education.[32] It seems that the differential also remains linear in southern Europe; data based on husband's education (which is highly correlated with wife's education) show that the reversed J-shaped curve has emerged in Italy only in the industrial north; elsewhere the association is negative throughout the educational spectrum.[33]

These findings are generally confirmed in the results of the Comparative Fertility Study, which laid considerable stress on investigation of the educational factor. The total number of children expected by educational level of wife (standardized by duration of marriage) is shown in table V.15. These data should mainly be used to study internal trends and patterns, since the educational categories are not strictly comparable internationally. It would appear that the size of the differential by educational attainment separates the countries according to their stage of economic development. Thus in Hungary, Poland and Yugoslavia, differences between women with elementary school education or less and those who have gone beyond high school represent more than one child, but these differences are negligible in the northern and western countries. Again, differences at the upper end of the educational scale are small in the south and east, and the relationship turns to positive (i.e. takes the reversed J-shape) in Denmark, Finland

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[30] Post-war trends in female employment are documented in *Economic Survey of Europe in 1968: The European Economy in 1968* (United Nations publication, Sales No. E.69.II.E.1), chap. 3, "Determinants of labour supply in Europe, 1950-1980".

[31] Tabah, *op. cit.*

[32] Berent, *loc. cit.*, pp. 263-266.

[33] Tabah, *op. cit.*, p. 43.

and Belgium. Although the relationships between fertility and both place of residence and wife's education are especially strong in eastern and southern countries, additional tabulations show that the association with the former does not explain that with the latter. Like urban/rural differential, furthermore, trends indicated in the data by marriage duration suggest that the spread of differences is declining over time. Finally, lower levels of education are linked at the national level with shorter interval from marriage to the first birth as well as with higher over-all expectations.

One of the avenues through which education influences fertility is by preparing women for employment; participation in the labour force itself is also universally associated with lower fertility, and usually the margin of difference is large between women who take jobs and those who do not. The logic of the inter-relationship between these phenomena is rather complex, however, and short of longitudinal data it is difficult to get a clear view of the underlying decision-making process. There is, for instance, the question of fecundity: do women work because it is difficult for them to have children, or do they limit their families because they intend to work. Then there is the question of economic necessity: the situation of the woman who is driven to work to help support her family is very different from that of a woman who works to maintain her independence or pursue a career. Above and beyond such conceptual difficulties, problems of definition and measurement are particularly severe in this area. The inclusion or exclusion of women working part-time, temporarily not working, or working within a family enterprise, may alter the results significantly.

Evidence concerning the inter-relationships between fertility and economic activity of married women has become increasingly abundant as the importance of the topic has been more widely recognized. The results of several detailed studies exploring different aspects of the relationships are included in Tabah's report.[34] Research based on census data for England and Wales (1951 and 1961) and special census tabulations for the Federal Republic of Germany (1966) focussed on activity rates for married women. In the former country these rose significantly during the 1950s for women of all ages at marriage and durations of marriage; among women with at least one child, the increases were especially marked at durations of marriage over seven years, indicating that women taking up work when their children reached school age contributed disproportionately to the over-all increases. An employment profile through the adult life of married women outlined for the Federal Republic of Germany confirmed the notion that activity rates for women under age 50 respond specifically to the number of children under 18 living at home. The Family Intentions Survey of England and Wales (1967) found that fecundity has a strong negative relationship with propensity to work, but that, even when comparisons were restricted to women having at least one child, cumulated fertility was considerably less among working women. Special census tabulations for Sweden (1960) further revealed that the negative relationship between the cumulated fertility of women married 10-14 years and current employment held for all levels of husband's income but was much more marked among women whose husband's earnings were low. The survey of Italy conducted by the University of Rome led to the generalization that socio-economic influence of fertility operates through the spread of female participation in non-agricultural employment. These observations are especially interesting in view of the fact that they are based on data from a period when not only female employment but also fertility itself was rising in each of these countries except Sweden.

The emphasis in eastern Europe on bringing women into the labour force has certainly been influential in the fertility decline in that region. Female participation rates are now so high that the choice between employment and childbearing is a very real one even for women in the principal years of family formation. Documentation of the fertility differential between working and non-working women has been assembled by Berent for most of these countries, and, when differences in age structure between the working and the non-working female populations can be accounted for, the gap in favour of non-working women appears to be substantial everywhere.[35] Data on average birth order for Poland support the conclusion of the Italian survey that this differential is of primary importance in the urban, non-agricultural setting. An inquiry made in Budapest in 1958 showed that the differential is wider also among women with relatively little education, placing socio-economic status in a perspective similar to the Swedish results.

While research using statistics specific to one country often permits in-depth analysis of a particular aspect of the relationship between female employment and fertility, it is usually difficult to demonstrate the validity of generalizations so derived on a cross-national basis. In putting the relevant survey results for the various countries together for purposes of the Comparative Fertility Study, much of the richness of the national data was inevitably lost, but once again the Study provides the best available opportunity for comparisons across national boundaries. Expected family size (standardized by duration of marriage) could be broken down separately for women working at the time of interview and women not then working, with the latter sub-divided into those who had worked previously and those who had never worked in five out of the nine countries. The figures shown in table V.15 reveal the differences that would have been anticipated. Women currently working expected fewer children than those who are not employed, and where those who have never worked can be singled out, their expectations are invariably the highest. Cross-tabulation of these data by urban/rural residence, however, failed to bring out any regular patterns and, although cell sizes were frequently too small to permit inferences, there was little in the cross-tabulation by husband's occupation or wife's education to suggest that the differential was widest among women of lower socio-economic status. Thus some of the more interesting propositions emerging from research at the national level could not be verified.

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[34] Tabah, *op. cit.*, pp. 56-91.

[35] Berent, *loc. cit.*, pp. 270-277.

This brief discussion serves at least to indicate the variety and extent of possible international differences in fertility. Furthermore, the directions of the differentials covered here necessarily reinforce each other in the contemporary climate of declining fertility. Opportunities for education and non-agricultural employment for women are greatest in urban areas, and trends all over Europe suggest continued expansion of these conditions. As over-all levels of education rise, however, this particular differential may become less important, since the differences are concentrated at the lower end of the scale. The reversal of the negative association at higher levels of education observed in some countries affects relatively few women and is not likely to push up the over-all fertility levels for some time. Women's participation in the labour force seems to be approaching a maximum already in eastern Europe; furthermore, its impact on fertility there and elsewhere could be to some extent vulnerable to social engineering designed to reduce the conflict between work and childbearing, through such programmes as day care centres, paid maternity leave, etc. Indeed, this could be one of the mechanisms behind the observed upturn in the birth rates in Czechoslovakia and Hungary. Exceedingly low fertility in the largest urban areas everywhere remains, however, a potent reminder of the direction in which the long-term trends appear to be headed.

D. Fertility control

The outstanding characteristics of present-day fertility patterns in Europe, from the small over-all size and the prevalence of two-child families to the concentration of childbearing within a narrow span of years in early adulthood, all point to the successful practice of fertility control. There is considerable evidence that throughout history societies have almost always placed some restraints on reproduction, indirectly if not directly. North-western Europe is an outstanding example of a situation where fertility was maintained at levels well below the maximum potential over a period of at least two centuries through the restriction of marriage.[36] But modern development would scarcely have been possible without direct interference with the reproductive process on an unprecedented scale. In the ethical and cultural context of present day Europe as well as other developed areas, this intervention has taken the form of birth prevention, specifically contraception and abortion.

It is only very recently, however, that the opportunity has arisen to begin to document these practices. A number of countries have now taken surveys of contraceptive behaviour, some more than once, and the data on the incidence and methods of contraception involved have been analysed in detail in the Comparative Fertility Study. At the same time, the legalization of abortion in a growing number of countries has resulted in the accumulation of a substantial body of official information on this topic. Thus, for the first time it is possible to move beyond the mere presumption of association and to work out in some detail the role of birth control as a determinant of current fertility trends.

1. *Contraception*

The impact of contraception on fertility depends on three factors: the proportion of married women actually at risk of pregnancy who use contraception, the efficacy of the methods employed, and the diligence with which the methods are practised. At any given time, there are certain married women of childbearing age who are not at risk of conception because they may be pregnant, their husbands are absent, they have a physical impairment making it difficult or impossible for them to conceive or for some other reason. It is usually not easy to assess proportions actually at risk, especially when it comes to the question of fecundity. Moreover, the second and third factors are entangled with one another and have usually had to be measured together as the use-effectiveness of specific methods, although it has been demonstrated that this can vary for any given method at different stages of the family formation process.[37] Motivation is, in fact, a key consideration in all three of these factors.

Contraceptive practice can be described in various ways. Knowledge of contraceptive methods and distributions of methods ever used are relevant aspects of the topic, but tabulations of methods currently employed give the clearest impression of the situation at any given moment. A women can report relatively reliably what means of contraception, if any, she used in the last month, and her response can also be evaluated in the light of what is known about her current risk status. Table V.18 shows the cross-national comparison of current contraceptive practice provided by the Comparative Fertility Study.[38]

The base of the population at risk could be defined only to the extent of eliminating women who were pregnant at the time of interview and those who were actually sterile (in the case of Yugoslavia only the former could be accounted for). It is important also to remember that these surveys were conducted over a period of six years, at a time when the practice of contraception was undergoing very rapid change in most countries. Hence the patterns reflected are highly specific to a particular time as well as place.

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[36] J. Hajnal, "European marriage patterns in perspective" in D. V. Glass and D. E. C. Eversley, eds., *Population in History: Essays in Historical Demography* (London, Edward Arnold, 1965), pp. 101-143.

[37] In the United States the percentage of failures in the first five years among women having two or more children and wanting no more were found to be as follows for selected methods: pill 60, diaphragm 42, condom 45, withdrawal 49 and rhythm 62 per cent (Ryder and Westoff, *op. cit.*, p. 334).

[38] It should be noted that sterilization for contraceptive purposes has not been included as a method in these tabulations. Operations undergone for this reason by either husband or wife are still relatively rare in Europe, but in the United States this most effective of methods is known to be most popular among couples where the wife is over 30 years old. It may well account for substantial proportions of the population considered here not at risk, so that its inclusion as a contraceptive method would add to the reported incidence of contraceptive use.

Table V.18

Incidence of contraception and methods currently used[a]

(Percentages)

Region, country and year of survey	*Current users as percentage*		*Current users by main method used*[b]							
	of all respondents	*of respondents at risk of pregnancy*[c]	*Total*	*Intra-uterine device*	*Pill*	*Condom*	*Diaphragm*	*Withdrawal*	*Rhythm*	*Other*
Eastern Europe										
Czechoslovakia (1970)	66	..	100	14	4	19	..	52	3	8
Hungary (1966)	64	70	100	–	–	16	7	66	4	7
Poland (1972)	57	..	100	1	4	17	–	49	23	5
Northern Europe										
Denmark (1970)	67	84	100	4	37	30	9	7	2	11
Finland (1971)	77	83	100	4	26	40	–	21	1	8
England and Wales (1967)	69	84	100	2	19	41	6	25	5	2
Western Europe										
Belgium (1966)	76	83	100	–	8	6	..	51	26	8
France (1972)	64	71	100	2	17	12	1	52	14	2
Netherlands[d] (1969)	59	..	100	1	45	23	2	9	19	1
Southern Europe										
Yugoslavia (1970)	59	62	100	2	9	6		73	3	8

[a] For source see table V.15.

[b] Women reporting multiple methods were assigned to the first of those methods as ordered from left to right in this table. Abstinence and sterilization are excluded.

[c] Excluding pregnant and sterile women, except for Yugoslavia where only pregnant women are excluded.

[d] 1958 and 1963 marriage cohorts only.

About one-half to three-quarters of all women of childbearing age reported that they were using some form of contraception at the time of interview, and the proportion rises to as much as five out of six women when the most clear-cut categories of women not at risk are removed from consideration. The incidence of contraceptive use may be somewhat more common in northern and western Europe than in the eastern and southern regions. The most important differences between countries, however, relate to the methods chosen. The newer and most effective methods, the pill and intra-uterine devices, are both widely used in northern Europe, although the pill is also popular in France and especially the Netherlands. The male methods—condom and withdrawal—are widely used in all countries covered, with the latter, which was probably the main means of family limitation through the principal stages of the fertility decline in northern and western Europe, still accounting for one-half or more of all contraceptive use in the countries of eastern Europe, Belgium, France and Yugoslavia. Rhythm is also very important in the western countries represented here and in Poland, a distribution clearly related to the fact that it is the only method approved by the Catholic Church. The dissimilar structures of contraceptive use thus revealed imply quite different degrees of effectiveness in avoiding conception: where reliance on rhythm and withdrawal is high, as in Poland and Belgium at the dates of survey, the relative success of contraception would have been reduced as compared, for example, with Finland and Denmark where the modern methods and the condom accounted for the great majority of contraceptive use. Nevertheless, variations in the patterns of contraceptive use were far from sufficient, nor did they even always go in the right direction, to account for the concurrent differences in actual fertility levels.

Since resort to contraception increases as couples achieve the number of children they desire, it is impossible to infer time trends from the reported use of contraception by duration of marriage in one-time surveys. Nevertheless, some trends in these data (not shown here) are unmistakable. The use of contraception decreases with increasing duration after the initial 10 years of marriage; and although this is partly a reflection of fecundity decreasing with age, the latter is almost certainly overshadowed by the increasing use of contraception among more recent cohorts once they have passed the primary family-building stage. The innovative modern methods are very clearly more frequently chosen by recently married women everywhere. Subsequent surveys in a few countries have confirmed this movement toward more effective contraceptive behaviour; in Belgium, for instance, the use of the pill more than doubled between 1966 and 1972.

Marked differences in contraceptive practice were documented for sub-groups within countries as well as between countries in the Comparative Fertility Study. These help to explain the differentials discussed in the previous section of the chapter, and indeed they reinforce the notion of a diffusion process behind the adoption of new forms of fertility behaviour. Both contraception in general and modern methods specifically are more widely used in urban than in rural areas. Because of interrelationships with other factors such as religion and the medical infrastructure, the association of education and other indicators of socio-economic status with contraceptive practice is complex; where contraception is less widely practised, however, there is a strong positive relationship between wife's education and contraceptive use. Among individual methods, withdrawal is clearly associated with lower socio-economic status, whereas the modern methods are more likely to be characteristic of higher status as is the rhythm method also in Catholic countries.

The full extent of diversity in contraceptive practice among European countries cannot be appreciated on the basis of data confined to a few nations. One of the important circumstances lying behind such a wide range of contrast is variability of access to contraceptive materials for couples in different countries. This is, in turn, a question first of all of the legal status of contraception and secondly of a whole network of more or less consciously designed efforts to ease or hinder its practical availability. Where chemical and mechanical contraception is entirely against the law, as has been the case in Ireland, it may or it may not nevertheless be effectively available according to how the law is enforced and how difficult it is to obtain supplies elsewhere. The difficulties are likely to be greater in the case of the pill and the intra-uterine device which specifically require medical consultation. Rhythm and withdrawal, on the other hand, are methods which depend solely on the knowledge and motivation of the individual couple. Restrictive laws may, in fact, take the form of proscription of use, sale or merely the advertising of contraceptives. Since out and out prohibition is quite rare, however, the most important factor may well be the accessibility of information and services. Differences in behaviour among socio-economic groups within countries are especially likely to be affected by the question of whether or not contraceptives are provided and paid for as a routine aspect of public health care. Ireland, Hungary, Belgium, the Federal Republic of Germany and the United Kingdom are European countries where access to contraception has been effectively increased through changes in public policy enacted or announced since the beginning of 1973.[39]

2. *Abortion*

The influence of public policy is even more crucial in relation to abortion than to contraception. The official status of abortion is often an important determinant of the total number of abortions, and it will almost certainly define what is actually known about abortion incidence. Hence the discussion of this topic begins with a review of developments in abortion policy in Europe, in the light of which the reported incidence of abortion in Europe can then be evaluated.

Beginning in the inter-war period, new policies on abortion reflected emerging trends, which were often in opposition with one another, towards increasing concern for social welfare and the rights of women on the one hand and towards maintenance of demographic stability on the other. Abortion on request was introduced in the USSR in 1920 as a basic step toward female emancipation, but the decline of the birth rate in the 1930s led to the prohibition of abortion requested on social grounds after 1936. A series of measures adopted in Sweden in the late 1930s represented again a response to concern over low levels of fertility; they were designed to support childbearing within the context of voluntary parenthood, and abortion was provided for under certain well-defined circumstances. Elsewhere in Scandinavia, policy was changing in similar ways at this time.

After the Second World War the debate was taken up in more countries, and the numerous developments in official policy through this period are summarized in table V.19. The law on abortion was re-liberalized in the USSR in 1955, and this was followed in the next few years by a series of similar liberalization moves in east European countries and Yugoslavia (the German Democratic Republic followed suit a decade later). The Scandinavian countries continued along a path of gradual liberalization; in Denmark and Sweden this trend culminated with the introduction of abortion on request in the 1970s. In 1968, England and Wales, Scotland and Northern Ireland came under the category of countries with moderate liberalization of the Abortion Act. Other west European countries began to experience pressure for change, but not until 1974 were any changes enacted; in Austria and France broad on request laws were passed, omitting the middle stage of the moderate reforms adopted in Scandinavia and Great Britain. Reform legislation is being considered, and enactment seems a likely prospect, in Belgium, the Netherlands, the Federal Republic of Germany, Italy and Portugal. Meanwhile, trends in the opposite direction, involving the introduction of some restriction on abortion, have appeared in eastern Europe: moderate restrictions were introduced in Czechoslovakia (1962), Bulgaria (1960s) and Hungary (1974) and broad restrictions in Romania (1966).

Demographic considerations were often explicitly acknowledged as the principal reason either for the reimposition of restrictions on abortion or for the continuation of a highly restrictive law. Thus in Spain a law of 1941 stated:

> "Demographic policy is one of the fundamental preoccupations of our State. An effective demographic policy is not conceived without undertaking the problem of the thousands and thousands of lives which are frustrated before birth by criminal acts. . . . The Government, conscious of its responsibility, decides to combat the social crime which abortion represents and which impedes many thousands of Spaniards from being born annually."[40]

Similarly, in Romania the abrupt de-liberalization of abortion policy which occurred in 1966 was expressly

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[39] For a comprehensive review of the relevant policies, see B. Berelson, ed., *Population Policy in Developed Countries* (New York, N.Y., 1974).

[40] Del Campo in Berelson, *op. cit.*, p. 519.

TABLE V.19

Chronology of changes in abortion policy, 1946-1974

(Regional differences in sequence)

Year of passage	*Month and year of implementation*	*Type of law/policy*	*Northern Europe*	*Eastern Europe*	*Western Europe*
1946	1964	Continuation of liberalization ("anticipated weakness")	Sweden		
1947	1947	Moderate liberalization		German Democratic Republic	
1950	2.1950	Moderate liberalization	Finland		
1950	9.1950	Restriction		German Democratic Republic	
1955	1955	Abortion on request		USSR	
1956	4.1956	Abortion on request		Bulgaria	
1956	4.1956	Broad liberalization		Poland	
1956	6.1956	Abortion on request		Hungary	
1956	6.1956	Continuation of liberalization	Denmark		
1957	9.1957	Abortion on request		Romania	
1957	12.1957	Broad liberalization		Czechoslovakia	
1959	1.1960	Further liberalization		Poland	
1960	2.1960	Broad liberalization		Yugoslavia	
1960	12.1963	Moderate liberalization	Norway		
1962	12.1962	Restrictive interpretation		Czechoslovakia	
1963	6.1963	Further liberalization	Sweden		
1965	3.1965	Liberalized interpretation		German Democratic Republic	
1966	7.1966	Liberalized interpretation		Czechoslovakia	
1966	10.1966	Broad restriction		Romania	
1967	4.1968	Broad liberalization	UK		
1967	1.1968	Moderate restriction		Bulgaria	
1969	4.1969	Further liberalization		Yugoslavia	
1970	3.1970	Further liberalization	Denmark Finland		
1972	3.1972	Abortion on request		German Democratic Republic	
1972	5.1972	Further restriction		Bulgaria	
1973	1973	Moderate restriction		Czechoslovakia	
1973	10.1973	Abortion on request	Denmark		
1973	1.1974	Moderate restriction		Hungary	
1974	2.1974	Moderate liberalization		Bulgaria	
1974	1.1975	Abortion on request	Sweden		
1974	1.1975	Abortion on request			Austria
1974	1.1975	Abortion on request			France

due to concern with population growth, then considered to be inadequate, but concern for women's health as a result of multiple abortions was also present and given as a rationale.

Threat to maternal health was more often cited, however, as a reason for liberalization of abortion laws, the danger in this case stemming from illegal abortions. Additional humanitarian considerations have also been recognized, as in the 1955 decree of the USSR where the intention was to "give women the possibility of deciding for themselves the question of motherhood". In Scandinavia and in Great Britain the Utopian concept motivating increasingly liberal abortion policy, in combination with widely disseminated information and contraceptive devices plus extensive sex education, looks forward to the time when every child will be a wanted child. The most recent legislation in Sweden and France apparently also aims quite simply at making abortion respectable.

As previously noted in the case of contraception, the letter of existing law regarding abortion does not always represent effective policy at any given time and place. Restrictive laws may be laxly enforced as in the Netherlands:

> "Although induced abortion is prohibited and can be punished severely as a criminal offence, the legislation existing at present is not enforced, with the exception of improper and harmful practices. . . . Today, several abortion clinics, run by a specially created Foundation for Medically Justified Abortion (Stimezo) do, in fact, operate without any interference from the Department of Justice."[41]

Similar conditions exist in other countries. Social ambivalence sometimes is cited as a reason for such a state of affairs; the government need not give its official stamp of approval to a practice condemned by a significant segment of the population, while at the same time the clandestine practice, virtually unhindered unless a woman dies, enables those who do not object to the procedure to obtain it with relative ease. Thus the discrepancies arising between *de jure* and *de facto* situations can become very wide indeed.

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[41] Praag and Lohlé-Tart in Berelson, *op. cit.*, p. 308.

Moreover, the same law may be variously interpreted within a single country. In Switzerland, the board selected for approval of abortion will be nearly always negative in some cantons, and nearly always positive in others. In Great Britain, there are large differences between the interpretation of the 1967 Abortion Act in Scotland and England, and within England differences in accessibility of abortion between regions, although the wide discrepancies have diminished somewhat. Efforts to liberalize the law further aim to extend to all areas the *de facto* condition of abortion on request which now exists in some parts of the country.

A change in policy also may be misleading: an apparently sweeping restriction may in practice result in only minor changes in incidence (or, as in Romania, may at first result in a major reduction in numbers of abortions, which gradually return to approximate earlier levels as interpretation is relaxed); an apparent liberalization may not result in immediate increase in incidence if, for example, the medical profession is slow to respond to the change, as may be anticipated in France, or if the incidence was already rising sharply even before the liberalization occurred, as in Hungary.

Turning now to the available statistics on abortion, these are almost always confined to legal occurrence which means that they cover only a few countries and even there the true extent of the practice is covered in varying degrees.[42] Abortion rates and ratios are presented in table V.20,[43] and the numbers of abortions and live births together with an indication of major policy changes are shown in figure 14. Both the rates and the ratios, but especially the former, tend to be higher in the eastern countries than in the northern countries for which they are available. For instance, abortions per 1,000 women of reproductive age were twice as high in Czechoslovakia in 1971 (31.4) as in Sweden in 1972 (15.2), and in the latter year the rate in Hungary (77.5) was approximately seven times the rate recorded in Denmark (11.5). It is unwise to rely solely on either abortion rates or abortion ratios for comparisons; with identical ratios of 337 per 1,000 live births, Poland in 1962 and Finland in 1971 had greatly different rates, due to the fact that Poland had a relatively high birth rate and a high abortion rate at that time, while in Finland a decade later both rates were low. The chart also illustrates the out-of-phase relationship between changes in policy and changes in incidence. Contrary to expectation, changes in the latter often precede the former, regardless of the direction of policy change, suggesting that women and/or the medical profession anticipate forthcoming policy developments and begin in advance to act accordingly.

The ultimate impact of legal abortion on fertility is inextricably linked to that of contraception on the one hand and that of illegal abortion on the other; the three can be taken as alternative strategies of fertility control. In this section evidence has been presented concerning the comparative importance of the first two factors among some countries, and certain inferences concerning the balance between them can also be made. Thus, where the legal abortion rate is low, as in Scandinavia and Great Britain, its contribution to fluctuations in fertility is less apparent than in eastern Europe where abortions are far more numerous and the relative contribution of contraception far less significant. In complementary fashion, the most effective methods of contraception are in widest circulation in northern Europe where legal abortion is fairly readily available but less frequently used.

It is difficult if not impossible to proceed to the next step of evaluating the effect of either of these factors in quantitative terms, partly because the role of illegal abortion is virtually undocumented. There is, however, indirect evidence which is revealing. The Federal Republic of Germany and the German Democratic Republic both have exceedingly low birth rates and are also similar in their cultural and religious composition. The latter country has had a gradually liberalizing abortion policy over the years, while abortion has remained restricted in the former, and one is led to the conclusion that either contraception is practised with an unusual degree of success in the Federal Republic of Germany or the role of illegal abortion is similar there to that of legal abortion in the German Democratic Republic. Even more intriguing is the observation of the Comparative Fertility Study that there is a correlation between abortion incidence and dependence on withdrawal as a method of contraception. The association was found to be positive and clearly linear on the basis of data on legal abortions for several European countries. For some other countries characterized by low fertility, heavy reliance on less effective methods of contraception and small incidence of legal abortions, such as France and Belgium, the estimated levels of illegal abortion appeared to be high.

E. Conclusions

Taken together, the developments described above constitute evidence of profound changes in reproductive patterns. The decline in national levels of fertility in Europe over the quarter-century since the Second World War has been all but universal.[44] Although the course of the decline has varied in significant ways from region to region and from country to country, the processes underlying the change have tended to converge, bringing about a high degree of similarity in present behaviour. The most important such trends are those toward early childbearing and small family size.

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[42] Further difficulties in reporting incidence relate to quasi legal abortions (called "West End" or "private" abortions prior to the Abortion Act in England) and variety of official reporting (as for instance in the inclusion *versus* the exclusion of abortions performed in doctors' offices in Poland).

[43] The rate is defined as the number of abortions per 1,000 women aged 15-44; the ratio is the number of abortions per 1,000 live births.

[44] Even in Albania and Ireland, the two countries where least change has occurred, assumptions of declining fertility are built into the official national population projections for the near future; see chapter VII.

The incidence of legal abortions in some countries, 1955-1973

(Rates per 1,000 women aged 15-44 and ratios per 1,000 live births)

Country	*1955*	*1956*	*1957*	*1958*	*1959*	*1960*	*1961*	*1962*	*1963*	*1964*	*1965*	*1966*	*1967*	*1968*	*1969*	*1970*	*1971*	*1972*	*1973*
Bulgaria[a]																			
Rates	..	..	17.8	21.5	26.0	31.2	38.7	42.3	45.0	48.7	51.0	53.3	51.8	47.1	56.5	63.2	69.7	70.1[b]	..
Ratios			218	270	327	396	508	576	633	713	776	819	738	627	759	874	985	1005[b]	..
Czechoslovakia																			
Rates	0.8	1.1	2.7	22.8	29.3	32.5	34.1	31.5	24.1	23.6	26.3	29.6	31.4	32.4	33.1	32.3	31.4	28.3[b]	..
Ratios	8	12	29	280	365	405	432	403	290	298	354	412	452	456	457	427	398	358[b]	..
Denmark																			
Rates	5.9	5.0	4.4	4.3	3.9	4.2	4.4	4.2	4.1	4.7	5.3	5.8	6.4	6.1	7.4	7.6	10.0	11.5	..
Ratios	70	60	54	52	48	51	53	50	48	54	59	66	81	83	104	106	134	156[b]	..
England and Wales[c]																			
Rates	..	..	..	..	..	..	..	..	..	..	..	..	..	2.4	5.3	8.1	10.1	11.5	..
Ratios	..	..	..	..	..	..	..	..	..	..	..	..	..	27	64	96	126	154	..
Finland																			
Rates	..	5.7					6.3	6.3	5.8	4.9	4.7	5.1	5.4	6.0	7.8	13.8	18.9	..	..
Ratios	..	62					71	73	69	62	61	68	73	90	124	241	337	..	..
Hungary																			
Rates	16.3	38.3	58.0	68.7	72.1	76.4	79.4	75.2	78.4	82.2	80.0	82.8	83.1	88.8	90.6	83.5	81.3	77.5	72.8[b]
Ratios	176	464	744	940	1023	1129	1267	1251	1316	1393	1328	1315	1213	1311	1337	1297	1228	1170	1080
Norway																			
Rates	..	..	..	..	..	..	..	..	..	3.7	4.8	6.2	7.0	7.2	8.7	10.7	13.9	..	..
Ratios	..	..	..	..	..	..	..	..	..	40	51	67	75	75	94	121	186	..	..
Poland																			
Rates	..	..	..	..	..	..	..	..	..	..	..	32.1	30.7	30.1	28.6	28.7	26.7	26.4	..
Ratios	..	..	..	..	..	..	..	..	..	..	..	430	426	414	395	384	356	350	..
Sweden																			
Rates	3.1	2.6	2.3	2.2	2.2	1.9	1.9	2.1	2.3	3.0	4.0	4.7	6.2	7.0	8.8	10.2	12.2	15.2	..
Ratios	42	36	32	31	31	28	27	29	30	38	51	58	84	99	128	143	171	218[b]	..
Yugoslavia																			
Rates	..	..	..	..	..	..	..	..	33.3	35.1	39.8	42.2	44.9	51.8	..	..	..	..	..
Ratios	..	..	..	..	..	..	..	..	363	392	452	495	546	642	..	..	..	..	..

Sources: United Nations, *Demographic Yearbook*, various years, and C. Tietze and D. Dawson, "Induced abortion: a fact book", *Reports on Population and Family Planning*, New York, N.Y., Population Council, No. 14 (September 1974). The latter data are based on official or semi-official sources as follows: Bulgaria: I. Starkaleff, B. Papsoff and G. Stoimenoff, in "Die Abortsituation in der Volksrepublik Bulgarien", *Internationale Abortsituation, Abortbekampfung, Antikonzeption*, K H Mehlan, ed., Leipzig, 1971, pp. 26-31; Czechoslovakia: Institute for Health Statistics, *Zdravotnicka Statistika CSSR, Potraty*, Prague; Denmark: National Health Service, *Medicinalberetning for Kongeriget Danmark*, Copenhagen; Finland: National Board of Health, *Yleinen terveydenja sairaanhoito*, Helsinki; Norway: Nordic Council, *Yearbook of Nordic Statistics*, Stockholm; Sweden: National Board of Health and Welfare, *Allmän hälsooch sjukvard*, Stockholm.

[a] Legal abortions for social reasons only.

[b] Estimate by the ECE secretariat.

[c] Resident population only. Abortions permitted under the 1967 Abortion Act.

FIGURE 14

Annual numbers of legal abortions and live births in selected countries, 1950-1973

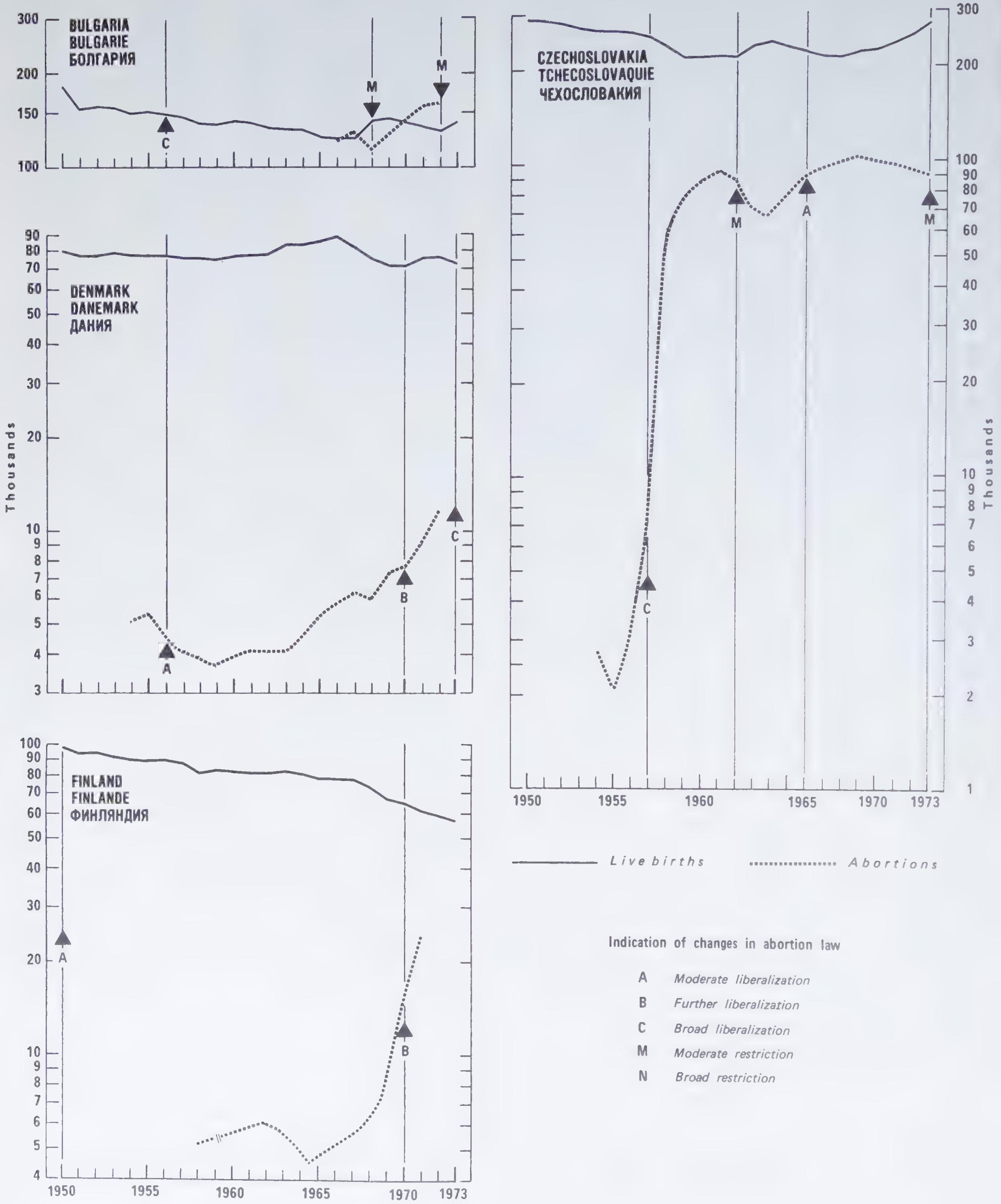
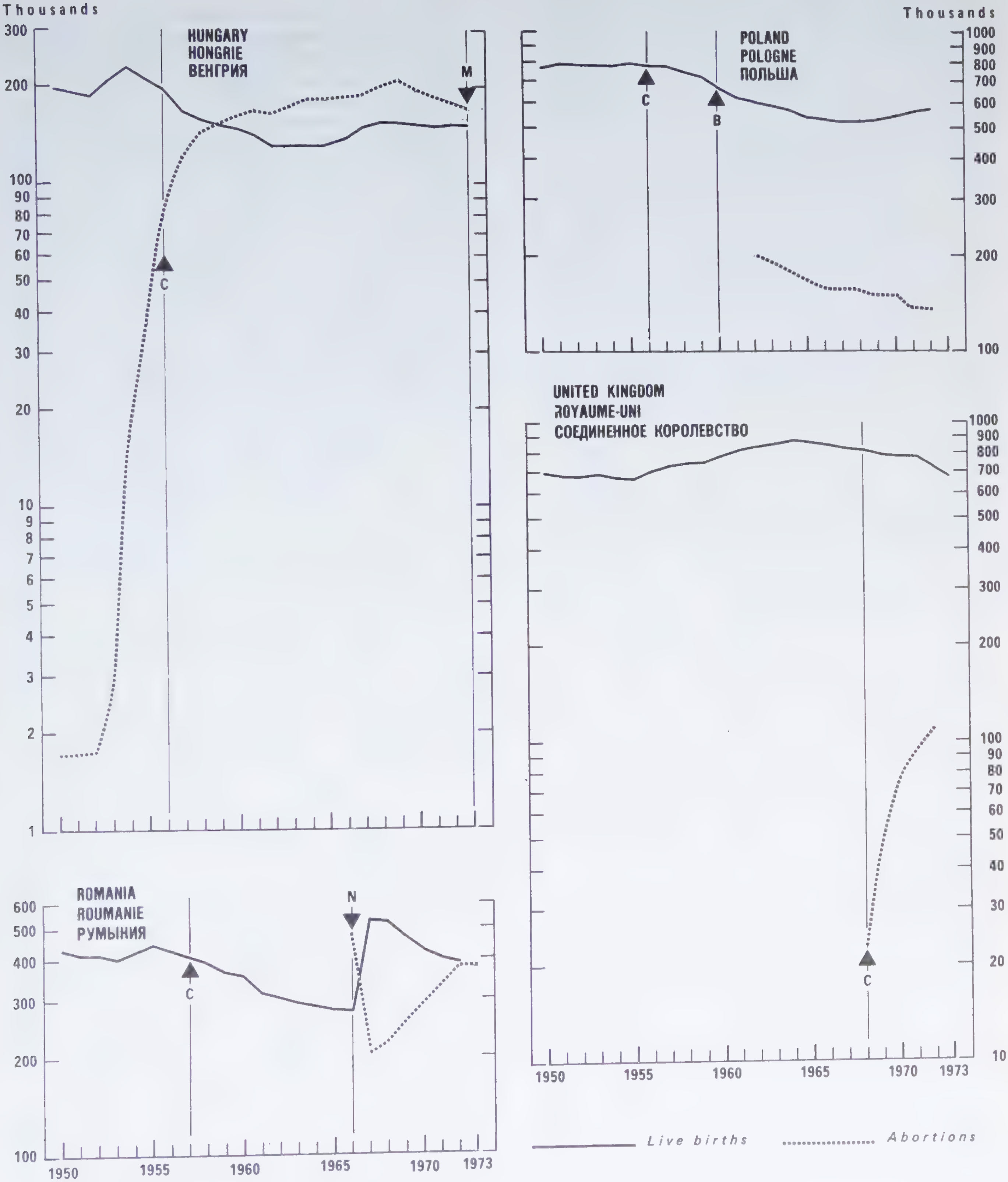


FIGURE 14 (*continued*)

Annual numbers of legal abortions and live births in selected countries, 1950-1973



Early and widespread marriage was always the general rule in eastern Europe, and the decline of fertility has not involved any significant departure from these norms. It is rather the restriction of childbearing within marriage which has dominated change in this region. Average family size, which remained high up to the Second World War, has dropped sharply due primarily to decreasing fertility rates among older women and at longer durations of marriage. Thus, in this case, early childbearing and small family size are different ways of looking at the same phenomenon.

Developments in northern and western countries have been more complex. Small families were already prevalent there before the Second World War. However, age at marriage had been unusually high and proportions marrying also low in these regions up to the latter part of the nineteenth century when nuptiality began to rise in accompaniment with fertility decline. This trend toward earlier and more universal marriage culminated in the post-war period; with large numbers of young women entering married life, there was considerable upward pressure on birth rates due both to the potential for genuine increase in cohort fertility and to the piling-up effect as successively younger cohorts started the family building process, overlapping each other in time. This phenomenon accounts to a large extent for the baby boom. Eventually, however, further curtailment of childbearing within marriage outweighed the effect of high fertility among young women, and the over-all downward trend of fertility resumed.

Only in southern Europe and in Ireland does somewhat later marriage still provide a degree of restraint on childbearing. The practice of fertility control also remains less well established there. Hence the likelihood is that the dual process will continue in this region for some time.

The new pattern in the female life-cycle, which now characterizes all regions except the South, has far-reaching social and economic implications. More than nine out of ten women marry, typically in their early twenties, and most proceed to have two or three children in rapid succession, completing their families while they are still under age 30. The distance between generations has thus diminished, and young children are brought up almost exclusively in a world of very young adults. By the time they reached their early thirties, most women are ready to seek alternatives to home-centred life in employment or other forms of involvement in community affairs. These are entirely new phenomena facing society, demanding fundamental readjustments of which the feminine liberation movement is merely one facet.

Under these circumstances, trends for the future are in one sense easier and in another harder to predict. Since 75 to 80 per cent of total fertility now falls below age 30, the guessing game concerning the reproductive performance of successive cohorts is relatively quickly resolved. However, the more serious consequence is that fertility becomes highly sensitive to temporary influences such as economic, social and political conditions. The baby boom certainly had some of this ephemeral character, but we have as yet no way of evaluating this element in the very recent precipitous drop in the birth rate in some of these same countries. It would seem likely, however, that it is at least in part a response to the economic uncertainties of the times.

Present fertility patterns nevertheless limit the options for future change. There is a logical limit to the scope for decline in age at marriage as well as to the proportion of women who can ultimately marry. The situation is similar with regard to the proportion who then go on to have a first child and the pace of childbearing after marriage. It would seem that recent developments have approached these limits, at least in some countries. Thus changes in the timing of births and in the proportions of all women who have children can for the most part only be such as to lower fertility. The situation would be similar to a reversal of the baby boom; mere postponement of marriage or childbearing would result in the depression of period rates due to the stretching out of events, but if this should ultimately lead to avoidance altogether, then cohort reproductive performance would also be affected. As pointed out in chapter IV, there are signs that nuptiality is already declining in some countries, notably Sweden. On the whole, it seems more likely that age at marriage will rise, or that marriage and childbearing will become less universal, than that there will be a slowing down in the pace of childbearing. Many factors, such as the desire for higher education and economic independence, are likely to lead young women to postpone marriage as well as the initiation of childbearing after marriage, but the very same sort of reasoning, especially the need or desire for employment, would work against the spreading out of births in time.

The influence of age structure on period fertility rates can also already be determined with some degree of accuracy, at least for the next twenty years. In the northern and western countries which experienced the baby boom, exceptionally large cohorts will be entering the childbearing years over the next decade or so, pushing period indicators up. After about 1985, the situation will change abruptly, and the influence on age structure will again be a negative one, similar to the situation in the 1950s. Almost directly opposite trends will prevail in eastern Europe. Annual numbers of births typically declined through the 1950s and the early 1960s, so age structure will exert a negative influence on the period rates for at least the coming decade and will tend to become positive thereafter. Fluctuations in age structure will be less marked in the southern countries.

The major unknown regarding future reproduction remains the trends in average family size. Here one must resort largely to speculation. The only evidence available is the sample survey data on expectations, and this strongly suggests continuation of the declining trend toward families of two children or even less. The case is strengthened by the fact that the opportunity for couples to realize their desire for small families is constantly improving with better birth control technology, its greater availability and with the liberalization of abortion laws. It is not hard to find a rationale for small families in modern life, and among the more obvious arguments there seems little reason to expect significant change in the near future. Economic problems, crowded urban conditions, and the expansion of women's activities outside the home are among the many continuing motivations for a high degree of fertility control.

It is in this connexion that recent policy developments in eastern Europe are especially interesting. Since the mid-1960s concern over falling fertility has resulted in the introduction of governmental measures designed to promote childbearing in several countries. The specific provisions of these policies have varied considerably as has their apparent success in achieving their purpose. At one extreme is Romania where the policy of abortion on request which had been in effect for nearly a decade (and numbers of abortions had come to exceed numbers of births by a wide margin) was suddenly restricted in 1966; at the same time, the dissemination of contraceptives was prohibited, and some steps were taken to ease the social and economic burden of childbearing. The immediate dramatic results of this change in policy are well known, but in the ensuing years the situation has tended to revert to what it was previously or even to reflect a more advanced stage in the transition process. The probability of having a second child was only 20 per cent higher in 1972 than in 1966, and the probability of having a fifth child was actually more than 20 per cent less. In Bulgaria, Czechoslovakia and Hungary, the approach chosen leaned more heavily on social and economic incentives for childbearing. For a number of years, social policy has focussed on increasing family allowances, extended paid maternity leave and similar measures. From the evidence examined earlier in this chapter, it would seem that there has been at least some rise in marital fertility in response to these changes, or at least that further decline has been halted. Moreover, restrictions on abortions introduced in some countries of eastern Europe recently must have also played a role, but it remains to be seen whether this effect will be any more enduring than it has been in Romania. In short, birth rates may be vulnerable to temporary manipulation by changes in abortion policy in populations which rely heavily on this method of fertility control. Where the motivation for fertility control exists, however, other methods, including illegal abortion, will eventually fill the gap. The possibility for change effective over a longer time probably rests with altering the underlying motivational factors themselves.

Chapter VI

MIGRATION

A. Introduction

In the nineteenth and twentieth centuries, Europe experienced successive waves of mass emigration fluctuating with opportunities abroad and with crises at home, but also linked in the long run with the push factor associated with the expanding rates of population growth arising from falling death rates. The climax of overseas migration was reached in the early twentieth century, immediately preceding the First World War. Gross emigration from Europe between approximately 1900 and 1914 is estimated to have averaged more than 1 million per year. The inter-war period witnessed the fading of mass European emigration. The net migration loss, which had been some 8 million between 1900 and 1910, and about 5 million in the next five years, fell to 3 million in the 1920s.[1] In the 1930s gross emigration from Europe fell to the lowest level in a century and was represented mainly by secondary emigration (families joining the bread-winner who had previously emigrated) and by movements of political refugees. In the early 1930s Europe actually gained from immigration.

The shrinkage of emigration in the inter-war period was partly connected with restrictions imposed by overseas receiving countries and with the great depression. It has been suggested that, in addition to these factors, the structural demographic and economic factors causing mass European emigration faded away. The open spaces of overseas countries had been settled and were being developed by capital-intensive measures that reduced the demand for new labour. Simultaneously, many European countries were passing beyond that stage of demographic and economic development that historically produced the great overseas emigration. "The centripetal forces affecting migration have superseded the centrifugal ones."[2]

The Second World War and its consequences temporarily disrupted, but did not change, the basic long-run factors making for a downward trend in net overseas emigration from Europe. In the early post-war years overseas emigration picked up sharply again for a time, at first through the resettlement of refugees, then through a revival of traditional waves of emigration to North America, Latin America, Australia and New Zealand, when all had high demands for industrial labour for their rapidly developing economies. In 1950-1970, in line with its tradition, Europe continued to play a role in the peopling of the New World. However, the component from northern and western Europe in the total immigration to North America and Oceania declined considerably, and the traditional outflow from southern Europe to Latin America almost ceased. During the same period, return movements back to Europe and new immigration into Europe from other continents gained in importance. As a consequence, the net emigration balance of Europe with overseas countries fell progressively. At the same time there was an intensification of migration within Europe, mainly northward movements, in several cases of a temporary nature and affecting mostly workers. Nevertheless, several countries in the region showed an over-all net immigration gain as a result of these intra-European movements.

Migration had important effects not only on the total growth, but also on the age and sex composition of the population of a number of European receiving and sending countries. Over-all migration trends in Europe in 1950-1970 and their effects on the populations concerned will be dealt with in this chapter, which will conclude with a tentative outline of migration prospects.

B. Migration trends in Europe

1. *Net migration balances*

In the following paragraphs, a broad summary is given of the net migration balance for the period 1950-1970, and separately for the 1950s and the 1960s, for the whole of Europe, for the four European regions and for the main sending and receiving countries.

Net migration balances for individual countries have been derived from the difference between the change in the total population and the excess of live births over deaths (or natural population increase) for the period considered. The sources of these data are annual total population estimates based on the nearest census and vital statistics records in the countries covered.

This kind of estimate is subject to the usual imprecision of methods based on difference: small errors in any of the components (for example, estimates of total population at the beginning and at the end of the period and vital statistics records) may result in a relatively large error in the balance of net migration. Consequently, the implied net migration balances for individual countries have to be accepted with caution: they represent broad estimates and their meaning is limited when they are minimal fractions of the total population change.

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[1] D. Kirk, *Europe's Population in the Inter-War Years* (League of Nations, 1946), p. 93. Total gross emigration from Europe since the first colonization movements of the sixteenth century has been estimated at over 60 million, most of which took place in the last century. At the time of the virtual disappearance of the great trans-oceanic European emigration in the middle of the inter-war period, the number of European-born people living overseas was about 20 million.

[2] Kirk, *op. cit.*, p. 95.

Moreover, the definition of total population lacks uniformity in the various countries. Some countries give *de facto* or present-in-area population; others give *de jure* or resident population. Few countries adhere to the internationally agreed concept of adjusted present population.[3] Also, the *de jure* and *de facto* concepts differ from country to country. Moreover, the international definition, which aims at including nationals temporarily absent from the country, is not always the most suitable for the understanding of European migration: many migrants defined as temporary because of the length and nature of their work and residence permit should in fact be considered as living abroad on a semi-permanent basis.[4] In such cases the *de facto* population has to be given preference.

In spite of these reservations, indirect estimates of migration balances give at least a reasonably adequate picture of broad orders of magnitude of migration streams; but a near migration balance can be the result of both massive emigration of nationals and massive immigration from abroad almost compensating each other. Over the whole period the United Kingdom is the only significant case of this kind in the group of countries covered, although such inward and outward movements were also extensive in the Netherlands for several years after the Second World War. Also, in several countries where temporary migration prevails, the net migration balance could conceal large movements of migration and repatriation within the period in question.

The period 1950-1970 closed with a net emigration of over 3 million for the whole of Europe vis-à-vis other continents (table VI.1).[5] About three-quarters of this net emigration took place in the decade 1950-1960, when it amounted to some 7 per cent of the continent's population increase. The net outflow fell from around 2.5 million in the 1950s to less than 0.7 million in the 1960s. Contrasting patterns are shown for the four European regions. In the period 1950-1970 western Europe had a net immigration balance of 8.8 million; eastern Europe and southern Europe lost respectively 3.6 and 7.4 million; and net emigration from northern Europe was below one million. The heavy outflow from southern and eastern Europe and the diminishing outflow from western and northern Europe were in line with pre-war patterns. New were the consistent and quite massive net immigration gains in western Europe, which accounted for a third of this region's growth between 1950 and 1970.

Virtually all countries of western Europe have in fact become zones of net immigration, whereas all countries of eastern and southern Europe have become net emigration countries. Northern Europe is a less homogeneous region, with one receiving country (Sweden), two traditional countries of emigration (Finland and Ireland), and another country (the United Kingdom) losing native population through large scale emigration and, at the same time, receiving many immigrants.[6] In other northern countries the negative balance was small and could reflect some statistical discrepancy in the basic data used for the calculation (appendix table A.VI.1).

Net immigration from all sources into western Europe was higher again in the 1960s than it had been in the 1950s, and so was net emigration from southern Europe, much of this loss going to western Europe. By contrast, emigration from eastern Europe was more than halved between the 1950s and the 1960s.

There is also a fundamental difference between the emigration streams from eastern and from southern Europe. Emigration from countries of eastern Europe had partly political motivations, while emigration from southern Europe took place mainly for economic reasons. In the first years of the 1950s, emigration from countries of eastern Europe was still partly a continuation of the post-war population movements caused by the re-drawing of frontiers, the transfers of sovereignty and changes of regime.[7] Almost 80 per cent of net emigration from eastern Europe in the 1950s was accounted for by emigration from the German Democratic Republic. Minor emigration streams continued throughout, while new peaks were reached in Hungary in 1956 and in Czechoslovakia in 1968.[8]

Numerically, net immigration was concentrated in a very limited number of countries. In the period 1951-1970 two countries, the Federal Republic of Germany

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[3] The concept of adjusted present population covers all nationals present in or temporarily absent from the country and aliens permanently settled in the country. The categories included are: national armed forces stationed abroad, merchant seamen at sea, diplomatic personnel located abroad, other civilian nationals temporarily abroad, civilian aliens resident in the country and displaced persons resident in the country. The categories excluded are: foreign armed forces stationed in the country, foreign diplomatic personnel located in the country, and civilian aliens temporarily in the country. See OECD, *Labour Force Statistics, 1960-1971* (Paris, 1973).

[4] For example, a large number of the 670,000 Yugoslavs counted as temporarily abroad, and thus included in the Yugoslav population by the census, are often counted as resident in the population censuses of the receiving countries. Because of the ambiguity in the definition of temporary migration, whenever possible the *de facto* concept has been given preference as far as labour migration is concerned. Certain ambiguities have remained: see, for example, the case of Switzerland referred to below.

[5] As in the other chapters of this survey, Europe excludes both the USSR and Turkey.

[6] In the United Kingdom, in the 1950s, emigrants and immigrants roughly balanced at around 800,000 persons. In the 1960s, about 1.3 million British-born emigrated and some 900,000 foreign-born came in. See K. Jones and A. D. Smith, *The Economic Impact of Commonwealth Immigration* (London, Cambridge University Press, 1970), p. 2; and C. A. Moser, "Statistics about immigrants", *Social Trends*, No. 3, 1972.

[7] Between 1945 and 1950 the net emigration from countries of eastern Europe was probably in the region of 2.5 to 3 million. The migratory movements which took place after the Second World War for political reasons are treated in detail in International Labour Office, *International Migration, 1945-1957*, Studies and Reports, New Series, No. 54 (Geneva, 1959).

[8] For Poland and Czechoslovakia the net implied emigration balances for the 1960s, respectively 282,000 and 155,000, are considerably higher than the official figures of net emigration, respectively 200,000 and less than 40,000, based on current reporting of outflows and inflows. See, for Poland, *Rocznik Statystyczny* (Warsaw, G.U.S., 1973), p. 101 and, for Czechoslovakia, *Statistická Ročenka CSSR* (Prague, 1971), p. 124.

TABLE VI.1

Population change, natural increase and net migration balance, by decade, 1950-1970

Region	Total population change	Natural increase	Net migration balance	Annual rate of change: Total population	Annual rate of change: Natural increase
	Thousands			Percentages	
Eastern Europe					
1950-1960	8 189	10 702	–2 513	0.9	1.1
1960-1970	6 214	7 316	–1 102	0.6	0.7
1950-1970	14 403	18 018	–3 615	0.8	0.9
Northern Europe					
1950-1960	3 672	4 163	– 491	0.5	0.6
1960-1970	4 393	4 835	– 442	0.6	0.6
1950-1970	8 065	8 998	– 933	0.5	0.6
Western Europe					
1950-1960	12 206	8 172	4 034	1.0	0.6
1960-1970	13 623	8 876	4 747	1.0	0.6
1950-1970	25 829	17 048	8 781	1.0	0.6
Southern Europe					
1950-1960	8 981	12 488	–3 507	0.8	1.1
1960-1970	9 112	13 004	–3 892	0.7	1.1
1950-1970	18 093	25 492	–7 399	0.8	1.1
Total Europe					
1950-1960	33 048	35 525	–2 477	0.8	0.9
1960-1970	33 342	34 031	– 689	0.8	0.8
1950-1970	66 390	69 556	–3 166	0.8	0.8

Sources: United Nations, *Demographic Yearbook*, various years; OECD, *Labour Force Statistics*, various years; national sources and ECE secretariat estimates.

NOTE. Periods refer to end of year. Countries with a population of less than 200,000 in 1950 are not covered. Total Europe excludes the USSR and Turkey.

and France, accounted for 8 million out of the net immigration balance of all European receiving countries of 9.2 million (table VI.2). About 40 per cent of the total population increase in these two countries combined, between 1950 and 1970, could be attributed to immigration. In the Federal Republic of Germany, while there were cyclical fluctuations, immigration became increasingly significant and in the early 1970s more than offset the natural decline to become the single factor in population growth. In this country, immigration from eastern Europe virtually ceased around 1961, but was rapidly replaced by an inflow from southern Europe, and later Turkey. In France net immigration strongly increased from the 1950s to the 1960s, augmented by the wave of repatriation from Algeria in 1962.

In Sweden and Belgium, immigration also contributed substantially (respectively 30 and 20 per cent) to population growth between 1950 and 1970, and its impact was even greater in the two smallest countries, Switzerland and Luxembourg, where nearly half of the total population increase was accounted for by migration.[9] In Switzerland, the impact of immigration tends to be underrated by the use of *de jure* or resident population measures which exclude large numbers of seasonal and border-crossing foreigners who in fact make a substantial and permanent contribution to the domestic labour force. In Luxembourg, immigration contributed more to growth than natural increase for the entire decade of the 1960s, and in the early 1970s it was entirely responsible for the total population increase.

The extent to which population growth in the main 11 countries of emigration has been affected by the net outward flow is shown in table VI.3.

Emigration led to a decline in total population in the German Democratic Republic in both decades, in Ireland in the 1950s and in Portugal in the 1960s. In the German Democratic Republic emigration was more than

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[9] These crude figures neglect the effects of immigration on the rate of natural population increase in receiving countries, which will be examined in section C of this chapter.

TABLE VI.2

Population changes and net immigration in main receiving countries, by decade, 1950-1970

Country	Total population change (thousands)	Net immigration		Annual rates of change	
		Thousands	Percentage ratios to population change	Total population	Excluding immigrants
				Percentages	
Belgium					
1950-1960	520	91	17.5	0.6	0.5
1960-1970	473	116	24.5	0.5	0.4
1950-1970	993	207	20.8	0.5	0.4
Germany, Federal Republic of					
1950-1960	5449	2714	50.2	1.0	0.5
1960-1970	5216	2121	40.2	0.9	0.5
1950-1970	10665	4835	45.3	1.0	0.5
France					
1950-1960	4008	1154	28.8	0.9	0.7
1960-1970	5108	1997	39.1	1.1	0.7
1950-1970	9116	3151	34.6	1.0	0.7
Luxembourg					
1950-1960	19	8	42.1	0.6	0.4
1960-1970	25	15	60.0	0.8	0.3
1950-1970	44	23	52.3	0.7	0.3
Sweden					
1950-1960	456	91	20.0	0.6	0.5
1960-1970	583	223	38.2	0.8	0.5
1950-1970	1039	314	30.2	0.7	0.5
Switzerland					
1950-1960	716	342	47.8	1.4	0.8
1960-1970	858	351	40.9	1.5	0.9
1950-1970	1574	693	44.0	1.4	0.9

Sources: United Nations, *Demographic Yearbook*, various years; OECD, *Labour Force Statistics*, various years; national sources.

NOTE. Periods refer to end of years.

twice the natural population increase over the whole period 1950-1970. In this case the relatively strong impact of emigration was associated with a very low level of natural increase. But in the same period, emigration was also practically equivalent to the entire natural population increase in Ireland and Portugal, both countries with relatively high levels of natural growth. However, in Ireland emigration declined sharply from the first to the second decade, while it doubled in Portugal. In Finland, Greece and Yugoslavia, where emigration absorbed almost one-third of the excess of births over deaths in 1950-1970, the rate of emigration strongly accelerated from the first to the second decade. In Greece a decline in emigration occurred after 1965. In Italy and Spain, emigration was equivalent to one-quarter of the natural population increase in the 1950s, but then fell considerably in the 1960s.

A clear and unequivocal correlation between natural population increase and migration cannot be expected, since many factors are at work in determining migration pressures. However, it can be observed that, on the whole, the receiving countries had relatively low levels of natural population increase, compared with the countries from which the immigrants came. The exceptions were countries of political emigration. In this respect, migration has acted as a compensatory factor, offsetting differences in the rates of population growth.[10]

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[10] An examination of the regional pattern of population change reveals that, within the countries of emigration, it was poorer areas that experienced the greatest population loss. For example, in the 1960s migration from the south of Portugal was five times higher than its natural population increase. In the Greek Peloponnesus, the Ionian and Aegean Islands, it was two and a half times higher. Because of emigration, population fell heavily in all the

TABLE VI.3

Population changes and net emigration in main sending countries, by decade, 1950-1970

Region and country	*Natural population increase (thousands)*	*Net emigration*		*Annual rates of change*	
		Thousands	*Percentage ratios to natural increase*	*With emigration*	*Without emigration*
				Percentages	
Eastern Europe					
Czechoslovakia					
1950-1960	1239	–	–	1.0	1.0
1960-1970	808	155	19.2	0.5	0.6
1950-1970	2047	141	6.9	0.7	0.8
German Democratic Republic					
1950-1960	714	1901	266.2	−0.7	0.4
1960-1970	400	528	132.0	−0.1	0.2
1950-1970	1114	2429	218.0	−0.4	0.3
Hungary					
1950-1960	788	162	20.6	0.6	0.8
1960-1970	339	10	2.9	0.3	0.3
1950-1970	1127	172	15.3	0.5	0.5
Poland					
1950-1960	4983	235	4.7	1.7	1.8
1960-1970	3157	282	8.9	0.9	1.0
1950-1970	8140	517	6.4	1.3	1.4
Northern Europe					
Finland					
1950-1960	486	70	14.4	1.0	1.1
1960-1970	329	177	53.7	0.3	0.7
1950-1970	815	247	30.3	0.7	0.9
Ireland					
1950-1960	263	399	151.7	−0.5	0.9
1960-1970	289	152	52.6	0.5	1.0
1950-1970	552	551	99.8	0.0	0.9
Southern Europe					
Greece					
1950-1960	963	191	19.8	1.0	1.2
1960-1970	839	406	48.4	0.5	1.0
1950-1970	1802	597	33.1	0.7	1.1
Italy					
1950-1960	4025	1106	27.5	0.6	0.8
1960-1970	4429	726	16.4	0.7	0.9
1950-1970	8454	1832	21.7	0.7	0.8
Portugal					
1950-1960	1091	711	65.2	0.4	1.2
1960-1970	1073	1353	126.1	−0.3	1.1
1950-1970	2164	2064	95.4	0.0	1.1
Spain					
1950-1960	3328	877	26.4	0.8	1.1
1960-1970	3891	498	12.8	1.1	1.2
1950-1970	7219	1375	19.0	1.0	1.2
Yugoslavia					
1950-1960	2621	583	22.2	1.2	1.5
1960-1970	2213	918	41.5	0.7	1.1
1950-1970	4834	1501	31.0	0.9	1.3

Sources: United Nations, *Demographic Yearbook*, various years; OECD, *Labour Force Statistics*, various years; national sources and ECE secretariat estimates

NOTE. Periods refer to end of years

In the period 1950-1970, without migration the populations of western and southern Europe would have grown at an annual rate of respectively 0.6 and 1.1 per cent. Because of migration they grew, respectively, by 1.0 and 0.8 per cent per year (table VI.1). In Switzerland the population increased at a high rate of 1.4 per cent per year, largely because of immigration (table VI.2).

2. *Gross emigration from Europe*

Gross emigration from Europe in 1951-1970 was of the order of almost half a million per year.[11] This corresponds to about one-half of the figure recorded in the peak emigration period, 1881-1920, but is considerably greater than the annual average for the inter-war period 1921-1939 (366,000) and for the period 1846-1890 (376,000).[12]

Table VI.4, based mainly on statistics of the receiving countries, shows broad figures of gross emigration from Europe between 1951 and 1970 to six main overseas destinations, which together cover the bulk of European gross emigration.[13] During these two decades, the largest gross intake of European emigrants was recorded in the United States of America, Australia and Canada (with almost 2.5 million each) and in Latin America (1.6 million) out of a total of 9.5 million. Data for 5-year periods show divergent trends. Gross emigration to Australia showed a steady increase throughout, and in the last half of the 1960s Australia became the leading receiving area. Gross European emigration to Canada and the United States of America was temporarily checked by the levelling off of economic activity in the early 1960s, but it picked up again in the second half of the 1960s. In South Africa there was a marked rise in the 1960s, following government measures to increase white immigration. However, the gross outflow from southern Europe to Latin America underwent a consistent and major decline. This was due only in part to an increase of emigration to the high income countries of North America and Oceania and to action on the part of Latin America governments to reduce the inflow of people without special skills. The main factor responsible for the drastic curtailment of the long-standing flow from southern Europe to Latin America, however, was the high demand for labour which developed in western Europe.

TABLE VI.4

Immigrants from Europe to principal overseas destinations, 1951-1970 [a]

(*Thousands*)

Country and region	*Total 1951-1970*	*1951-1955*	*1956-1960*	*1961-1965*	*1966-1970*
Total	9478.6	2791.6	2504.0	1876.6	2306.4
Australia	2391.6	513.1	524.9	588.8	764.8
New Zealand[b]	309.7	82.3	70.9	86.1	70.4
Canada	2327.9	699.9	672.9	365.2	589.9
United States[c]	2460.5	628.2	700.1	531.6	600.6
South Africa	341.9	68.4	45.2	78.6	149.7
Latin America[d]	1647.0	799.7	490.0	226.3	131.0

Source: United Nations, World Population Conference, 1974, *International Migration Trends 1950-1970* (E/CONF.60/CPB/18).

[a] Based on statistics of receiving countries.

[b] Years running from 1 April to 31 March.

[c] Years ending 30 June.

[d] From Italy, Portugal and Spain only, based on statistics of the sending countries. Migrants from these three countries constituted about 95 per cent of all European migrants to Latin America.

The magnitude of gross emigration from Europe (over 5 million in the 1950s and 4 million in the 1960s) sharply contrasts with the net emigration balance of 2.5 and 0.8 million, respectively. The difference between gross emigration from Europe and the net balance gives a rough indication of the gross inflow into Europe. This has been of the order of over 6 million for the two decades.

3. *Return of Europeans*

Although the total gross migration flow into Europe can be approximately estimated, it is much more difficult to isolate former European migrants returning, on the one hand, and new immigration from other continents on the other. Information about the returns of European emigrants is scanty and often contradictory. In the case of Australia, for the period 1946-1970 returns of European

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regions of emigration in Portugal, Greece, Ireland, Finland, and in several such regions in Spain and southern Italy. Of course, internal migration also contributed to the depletion of these regions' populations.

[11] It was about the same in 1946-1950. In the immediate post-war years, emigration from Europe was rising (a peak of over 750,000 was reached in 1949) and covered a fairly large number of refugees. See International Labour Office, *International Migration, 1945-1957* (Geneva, 1959), p. 165.

[12] See *Population and Australia, a Demographic Analysis and Projection: First Report of the National Population Inquiry* (Canberra, November 1974), vol. IV, Part D: "International aspects", paras. 15-26.

[13] Minor outflows are not covered in table VI.4—for example, emigration to Israel, about 150,000 in the 1950s and 130,000 in the 1960s. See World Population Conference, 1974, "International Migration Trends 1950-1970" (E/CONF.60/CPB/18), p. 27.

immigrants were estimated to have been between 17 and 26 per cent of gross entries, with marked differences according to nationality. Returns from Latin America to southern Europe in the 1950s were almost one-third of gross emigration and in the 1960s the balance of migration to Latin America became positive for Italy, and in the second half of the decade perhaps also for Spain. Ratios of returns from North America to countries of northern and western Europe are reported to have been rather high, but information is too scarce for precise levels to be assessed.[14] Actually, statistics of migration flows are deficient because they often cover arrivals and departures not only of genuine settlers, but also of long-term visitors. Granted the increasing mobility of people in affluent societies, the number of long-term visitors is gaining in importance.[15]

The returns of Europeans from newly independent former colonies and overseas territories are better known. The total number of repatriations since 1950 is estimated to have been over 1.5 million. Repatriations of French nationals from Indochina and North Africa amounted to about 350,000 in 1954-1959 and to 970,000 in 1960-1965, with a peak repatriation from Algeria of 860,000 in the single year of 1962. The net inflow into the Netherlands from Indonesia after 1950 and from West New Guinea in 1962 was almost 200,000 (including Indonesians who opted to settle in the Netherlands). Returns of Belgian nationals from the Congo in 1960 amounted to only about 15,000. In the first half of the 1960s, about 45,000 Italians returned from North Africa, mainly from the pre-war population colonies of Tunisia and Algeria.[16]

4. *Immigration into Europe*

Immigration into Europe of non-Europeans has mainly consisted of people from the New British Commonwealth[17] into the United Kingdom, of North Africans into France, and of Turks into the Federal Republic of Germany. Migration from the New Commonwealth into Britain reached significant levels in the latter part of the 1950s and in the early 1960s, before restrictive regulations were enforced. In Great Britain, the 1971 census enumerated almost 1.2 million people born in the New Commonwealth, or almost 40 per cent of people born outside the United Kingdom.[18] Of these, 290,000 had entered between 1950 and 1960 and 680,000 after 1960, with a high point of 90,000 entries in 1961.[19] Net inflows would have been somewhat higher, since the above figures based on census data exclude people who died after their arrival.

Immigration from North Africa into France has long existed, but the movement gained momentum after the Second World War. However, precise statistical information is seriously deficient, mainly because, to a large extent and for a long period, movements between France and that country's overseas departments and colonies have not been subject to control. At the end of 1970, the number of North Africans in France was estimated at about 920,000.[20] However, this figure is a poor indication of migration flows, as it excludes immigrants who had obtained French citizenship and those who had died after immigration, and includes children born in France of North African immigrants. The net inflow of Algerians is estimated to have been 50,000-100,000 between 1950 and 1954, small or negative in the second half of the 1950s, and just under 300,000 in the 1960s. The gross immigration of Moroccans was more than 150,000 in the 1960s and that of Tunisians about 60,000 in 1966-1970. Little is known about return movements.

During the 1960s, Belgium, the Federal Republic of Germany and the Netherlands had a net intake of about 60,000 North Africans, mainly Moroccans and Tunisians. There were also minor streams of North African immigrants into Italy, Spain and Greece.[21] The Netherlands also had a net intake of some 30,000 people from the Dutch Antilles and Surinam.

Turkey has clearly emerged since 1960 as one of the leading countries of emigration to Europe, especially into the Federal Republic of Germany, but also into Austria, Belgium, France, the Netherlands and Switzerland. By 1970 there were more than half a million Turks in Europe, the bulk of whom came in the second half of the 1960s. In the early 1970s, there was a further marked increase in their rate of immigration.[22]

5. *Summary of broad migration streams*

Over-all migration streams between Europe and other continents in the period 1950-1970 can be summarized as follows:

	Gross emigration from Europe[a] (1)	*Net migration balance*[b] *(in millions)* (2)	*Implied gross immigration into Europe*[c]
1951-1960 . .	5.5	2.5	3.0
1961-1970 . .	4.3	0.7	3.6
1951-1970 . .	9.8	3.2	6.6

[a] From table VI.4, but including emigration to Israel

[b] From table VI.1.

[c] Derived as difference between (1) and (2).

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[14] *Ibid.*, pp. 12-13.

[15] See foot-note 12 of this chapter.

[16] Already 220,000 had returned from the former Italian colonies in Africa in the immediate post-war period. International Labour Office, *International Migration, 1945-1957* (Geneva, 1959), p. 57.

[17] The term New Commonwealth refers to all Commonwealth countries in the period covered by this study with the exception of Canada, Australia and New Zealand. Although the range of countries included in the New Commonwealth is wide, the inflow of immigrants was mainly from the West Indies, India and Pakistan.

[18] This is derived from the results of the one-per cent sample analysis.

[19] The restrictions placed by the United Kingdom Commonwealth Immigration Act of 1962 put a check on the rising trend, but did not eliminate immigration since families joining the bread-winner, as well as persons with specialized skills or specific job offers, were still permitted to enter.

[20] Of which 650,000 were Algerians, 170,000 Moroccans and almost 100,000 Tunisians. Two years later North Africans in France were estimated to have risen by 200,000. See Centre national d'information démographique, "Les étrangers en France", *Population et Avenir* (Paris), No. 516, August-October 1973, p. 711.

[21] International Labour Office, *Some growing employment problems in Europe* (Geneva, 1974), p. 83.

[22] In the Federal Republic of Germany in September 1974 the Turks were the largest group in the foreign population, accounting for one million out of four. See *Wirtschaft und Statistik* (Wiesbaden), No. 11, 1974.

The implied gross immigration into Europe of 6.6 million can be broadly estimated as follows: 1.5 million, repatriation from former colonies and overseas territories; about 2-2.5 million, new immigration from other areas; and, by implication, the returns of European emigrants from overseas should be of the order of 2.5-3 million. In so far as the reliability of indirect calculations can be accepted for broad estimates, it may be concluded that in 1950-1970 at least 7 million European emigrants had settled in their overseas destinations, at an annual rate not too dissimilar from that recorded in the 1920s, while new, unusual streams of immigrants from other areas were sharply reducing the European net emigration balance.

6. *Intra-European migration*

While the net balance of European emigration with other continents was diminishing in the late 1950s and early 1960s, migration within Europe was gaining momentum.

Intra-European migration was already quite extensive in the 1930s, at the time when mass movements overseas had lost ground. Kirk's estimate is that in the middle of the inter-war period almost 11 million Europeans were living in Europe but outside their countries of origin.[23] This figure looks very high; but in Kirk's cross-classification Turkey was considered a European country, and there were about 1.1 million Turks living in European countries and over 900,000 European aliens living in Turkey. Adjusting for these, the 11 million would be reduced to about 9 million. Kirk's figure is also inflated by the considerable numbers who were reported as foreign-born in censuses only because of boundary changes incidental to the First World War, but who had actually never undergone international migration and by people who had been forced to migrate following peace settlements.[24] Normal peace-time movements motivated by economic considerations were still on a modest scale compared with migration nowadays.

The pattern of recent intra-European migration is also very different from that of the inter-war period. In the inter-war period, there were extensive population exchanges between countries, apart from forced post-war movements. For example, around 1930 there were 400,000 foreign-born in Belgium, but also almost as many Belgians in other European countries; 160,000 foreigners in the Netherlands, but also 180,000 Dutch abroad; 350,000 foreign-born in Switzerland, but also 200,000 Swiss abroad; and so on. There was virtually only one country, France, where the net gain from normal peace-time migration was substantial. At present, sending and receiving countries are more sharply differentiated, partly because intra-European population movements have taken the form of large-scale migration from the poorest countries towards the poles of industrial development. Geographically, in the inter-war period, population movements were mainly westward movements, while present-day migrations are mainly northward movements.

Intra-European migration statistics are in almost all cases seriously defective, because of difficulties of control. In the absence of reliable direct statistics on migration flows within Europe, an approximate measure of the cumulative flows can be derived from census reports, provided the countries of origin of immigrants are given. However, an accurate picture of migration flows is still difficult to obtain. On the one hand, census data supplied by countries differ in type and lack comparability; sometimes the number of foreign-born persons by country of birth is given, and at other times the number of aliens by political nationality. The number of foreign-born is a significant indicator, especially when the year of arrival is stated, since it represents for a specific period the net number of immigrants arrived, minus those who died after their arrival.[25] By contrast, the number of people of current foreign citizenship excludes the immigrants who have acquired the citizenship of the receiving country;[26] but where the *jus sanguinis* rule of nationality prevails, the children of foreigners, though born in the country, are considered political aliens.

Table VI.5 summarizes the distribution of people of foreign origin in Europe by main receiving countries and by large sending countries or areas, as enumerated in the censuses taken around 1970. The totals given are far from being an exact indication of the total net cumulative effect of migration; nor do they indicate the period during which migration occurred.

Broadly speaking, the table gives a total of 7.8 million immigrants of European origin living in the six main receiving countries, Belgium, the Federal Republic of Germany, France, Sweden, Switzerland and the United Kingdom. Another one million were living in other countries, of which 300,000 were in Austria, 300,000 in the Netherlands, 100,000 in Denmark, 70,000 in Norway and 60,000 in Luxembourg. There were also a number of immigrants in typically sending countries, such as Italy, Spain and Greece. Making allowance for migration within eastern Europe, which is said to have become

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[23] Kirk, *op. cit.*, appendix III, table 4, pp. 282-283. The estimates are made on the basis of census reports and refer sometimes to foreign-born, sometimes to foreign nationals. Hence, the comparability of data from different country sources is limited. The estimates give broad orders of magnitude only.

[24] For example, the bulk of the 764,000 foreign-born in Austria were earlier (internal) migrants from other parts of the collapsed Austro-Hungarian Empire who remained after the First World War, or were refugees from the large ceded territories. The same can be said of the 600,000 foreign-born in Hungary. Also the exchanges of population following the settlements of disputes in the Balkans and Graco-Turkish hostilities were huge. Kirk, *op. cit.*, pp. 102-104.

[25] However, the country of birth is not always a clear indication of the true origin of the immigrants. For the United Kingdom, a number of immigrants born in the West Indies, Asia or Africa, may be people of British stock. A recent study, based on the 1971 census, estimates the total coloured population of Great Britain at about 1.4 million, of which almost 1.3 million came from the New Commonwealth (480,000 Indians, 170,000 Pakistanis, 450,000 West Indians and 170,000 Africans). Of these, 730,000 were born outside the United Kingdom. See International Catholic Migration Commission, *Migration News* (Geneva, 1974), No. 6.

[26] The annual number of citizenships granted in the period 1950-1970 was, on average, about 6,000 in Belgium, 9,000 in Sweden, 7,000 in Switzerland, and almost 35,000 in France.

TABLE VI.5

Distribution of aliens in main countries of immigration by origin[a] in 1970

(*Thousands*)

Sending countries or areas	*Receiving countries*						*Total six countries*	*Total including other receiving countries*
	Belgium	*Federal Republic of Germany*	*France*	*Sweden*	*Switzer-land*	*United Kingdom*[b]		
Southern Europe[c]	346	1730	1867	65	660	202	4870	
Greece	22	343	10	14	9	..		
Italy	249	574	593	8	526	110		
Portugal	7	54	607	2	..	..		
Spain	68	245	601	4	102	49		
Yugoslavia	..	514	56	36	23	..		
Other	..	..	..	..	..	43[d]		
Northern and western Europe *of which:*	216	390	178	307	233	1071	2395	
Finland	..	..	..	207	..	..		
Ireland	..	..	..	..	..	717		
Eastern Europe	18	113	115	16	24	170	456	
Europe non-specified	..	20	..	..	..	..	20	
Total Europe[c]	580	2253	2160	388	917	1443	7741	over 9000
Africa *of which:*	53	40	1000[e]	3	..	205[d]	1301[e]	
Algeria, Morocco, Tunisia	48	23	965	1	..	..		
Asia *of which:*	..	543	35	8	..	675[d]	1293	
Turkey	20	469	15	4	12	6	222	
America	14	78	19	6	11	500[d]	628	
Total non-Europe[e]	87	661	1054[e]	17	23	1380	3222	4000
Non-specified and Stateless	29	62	179	6	140	271	687	
TOTAL	696	2976	3393	411	1080	3094	11650	over 13000

Sources: National population censuses.

[a] Citizenship, except for the United Kingdom (countries of birth).

[b] Great Britain only, 1971.

[c] Except non-specified.

[d] Mainly New Commonwealth.

[e] Estimate by the ECE secretariat.

substantial in recent years, the number of emigrants from European countries living in Europe was well over 9 million around 1970. The table gives also an estimate of over 3 million immigrants of non-European origin living in the six main receiving countries. A number of non-Europeans were also recorded in Spain (40,000 North Africans), Greece (30,000 Egyptians, Sudanese, Ethiopians and Somalis), and Italy (several thousand Tunisians).

With the fragmentary data available it is possible to identify only the larger streams of migration. By far the largest group of immigrants comes from southern Europe (about 5 million in the six main receiving countries). These, added to over 1.5 million coming from other Mediterranean countries of Africa and Asia (mainly Algeria, Morocco, Tunisia and Turkey) suggest the presence of a well-marked northward population movement. The number of immigrants from northern and western European countries is also significant. However, two main migration streams within the Nordic region are represented by the traditional migration from Ireland to the United Kingdom and from Finland to Sweden.

The exchange of population between countries of approximately similar levels of economic development has been of minor importance, with the one possible exception of Italy in relation to membership of EEC. Around 1973 there were about 970,000 emigrant workers from Italy in other countries of EEC, mainly in the Federal Republic of Germany and France. However at this time 72 per cent of all foreign workers (including Italians) in the nine EEC countries came from non-member countries.[27] These were made up essentially of the immigrants from areas outside Europe, already discussed in this chapter. There have been three main streams of such immigrants into Europe from other continents: from North Africa, largely into France; from the New Commonwealth in Africa, Asia and the West Indies into the United Kingdom; and from Turkey particularly into the Federal Republic of Germany.

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[27] *Mondo Economico* (Milan), 30th year, No. 9 (8 March 1975), p. 37.

The totals in table VI.5 tend to underestimate the cumulative effect of migration flows. For example, in the Federal Republic of Germany, arrivals from the German Democratic Republic are considered as nationals, although they represent effective immigration across present recognized national boundaries. In 1950-1961, the net immigration balance of these people in the Federal Republic of Germany was over 3 million.[28]

Other aspects of interest for the study of migration movements are also hidden in table VI.5. The definition of resident population sometimes excludes certain persons who actually work almost permanently in a country, although having their official residence in another country. This is the case of the border-crossing workers and of the seasonal workers, when the latter spend no more than a prolonged holiday in their country of origin.

Since 1970, the year of reference of table VI.5, in spite of restrictions in workers' recruitment, the number of foreigners has considerably increased in several countries. In both France and the Federal Republic of Germany, the number of aliens in 1974 has passed the 4 million mark. In France, the increase has continued even after restrictive measures aiming at avoiding wild immigration were enforced. In the Federal Republic of Germany, where the association between immigration levels and the business cycle used to be most evident, the number of immigrants has increased in spite of the declining levels of employment after 1971 and, more recently, rising unemployment.[29] Measures introduced in 1973 were designed to stop the recruitment of new workers, not to stop immigration, and since then the inflow of wives and children of workers already in Germany has exceeded the actual diminution of workers by over 250,000 persons.

The intensification of intra-European migration in the late 1950s and in the 1960s was brought about by a steep increase in the demand for labour in several of the highly industrialized countries of Europe, associated with only a moderate growth in their own domestic labour supply. The latter was due in part to the relatively low rates of population growth and unfavourable development of the age structure of the population, with the working-age group increasing at a slower rate than total population. Also involved, however, were declines in activity rates connected with longer schooling, earlier retirement, the trends towards shorter working hours, and the declines, due to higher education and full employment, in the labour supply for lower paid, menial, dirty, dangerous or otherwise unpleasant jobs or those lacking social prestige.[30]

The acceleration of intra-European population movements was accompanied by two other, not unconnected, features. In a number of cases, the migration of workers tended to prevail over the migration of entire families, so that temporary migration tended to prevail over permanent migration. Short-term migration was also encouraged by improved transport facilities, as well as by immigration policies in certain receiving countries whereby limits were imposed on such factors as the duration of employment contracts, periods of residence, and the rights of workers to bring their families. Basically, immigration policies in the 1950s tended to be used to overcome what at the time were considered transitory labour shortages. However, this turned out to be a longer-term structural maladjustment of the labour market, and several countries of northern and western Europe became increasingly dependent upon the continuing import of foreign labour for the running of basic sectors of the economy and for the maintenance of their living standards.[31]

7. *Turnover of migrant labour*

With the intensification of intra-European population movements, especially in the 1960s, the temporary migration of workers had become more significant in some countries than the permanent transfer of entire family groups from their native lands. Thus, the contribution of immigration to the growth of the labour force has been much greater than its contribution to the increase in total population. In countries such as the Federal Republic of Germany and Switzerland, where *Gastarbeiter* have tended to be preferred to permanent immigrants, the rate of turnover of immigrants was extremely high in the 1960s. In these countries a high proportion of the immigrants have been bread-winners who left their families in their home countries, and whose movements have therefore tended to be of a temporary nature.

Table VI.6 shows that in Switzerland, over the decade 1961-1970, for every ten workers gained, eight left: almost one million active immigrants have left the country, while 1.2 million arrived. The rate of turnover had tended to increase even before the 1964 restrictions.[32] Starting in 1964, the authorities followed a deliberate policy of limiting the increase of workers recruited on annual permits. Since voluntary departures remained fairly high, the ratio departures/arrivals also kept high (over 8:10). At the end of 1973, only 28 per cent of the

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[28] This took place before the enforcement of strict frontier control in 1961. Federal Institute for Population Research, *The Population of the Federal Republic of Germany. A World Population Year Monograph* (Wiesbaden, 1974), p. 30.

[29] The largest increase from 1970 to 1974 took place among immigrants from Turkey and Yugoslavia moving into the Federal Republic of Germany: Turks and Yugoslavs (with, respectively, over one million and about 700,000) together accounted for 42 per cent of all aliens in the country in September 1974. *Wirtschaft und Statistik* (Wiesbaden), No. 11, 1974, p. 768.

[30] *Economic Survey of Europe in 1968: The European Economy in 1968* (United Nations publication, Sales No. E.69.II.E.1), chapter III, "Determinants of labour supply in Europe, 1950-1980"

[31] International Labour Office, *Some growing employment problems in Europe, op. cit.*, p. 82. Also, *Economic Survey of Europe in 1965: The European Economy in 1965* (United Nations publication, Sales No. 66.II.E.1), part I, chapter II, pp. 77-84.

[32] *Economic Survey of Europe in 1965: The European Economy in 1965* (United Nations publication, Sales No. 66.II.E.1), part I, chapter II, p. 81.

TABLE VI.6

Arrivals and departures of immigrant workers, Federal Republic of Germany and Switzerland, 1961-1970

Year	*Federal Republic of Germany*			*Switzerland*		
	Arrivals	*Departures*	*Ratio D/A*	*Arrivals*	*Departures*	*Ratio D/A*
	Thousands			*Thousands*		
1961	360.5	141.0	*0.39*	176.1	100.2	*0.57*
1962	396.6	234.0	*0.59*	179.4	96.1	*0.54*
1963	377.5	260.3	*0.69*	164.6	121.6	*0.74*
1964	442.3	285.4	*0.65*	160.6	130.0	*0.81*
1965	524.9	293.7	*0.56*	104.7	113.6	*1.08*
1966	424.8	328.1	*0.77*	97.6	95.1	*0.97*
1967	151.9	474.1	*3.12*	90.6	75.9	*0.84*
1968	390.9	292.3	*0.75*	101.3	81.9	*0.81*
1969	647.0	235.5	*0.36*	104.6	90.7	*0.87*
1970	713.9	266.3	*0.37*	70.4	58.5	*0.83*
TOTAL 1961-1970	4430.3	2810.7	*0.63*	1249.9	963.6	*0.77*

Sources: Amtliche Nachrichten der Bundesanstalt für Arbeit, Arbeitsstatistik 1973, Nuremberg, and *Annuaire statistique de la Suisse*, Berne, 1973.

NOTE. The number of new arrivals corresponds to the number of annual work permits granted for the first time. The number of departures has been derived as the difference between the number of new work permits issued and the increase over the previous year in the total number of immigrant workers. The yearly increase refers in the Federal Republic of Germany to the 12-month period ending in September and in Switzerland to the 12-month period ending in August (including workers who have been granted permanent establishment permits).

foreign workers recruited on an annual basis had more than 7 years of residence in the country, while 50 per cent had been in Switzerland for less than five years and 28 per cent for less than three years.[33] These data only apply to resident workers, that is, the category of workers allowed to bring their families. A reasonable conclusion is that the rate of turnover would have been quite as high among the non-active foreign population, and almost certainly higher among seasonal workers.[34]

In the Federal Republic of Germany, in the same period, some 4.4 million foreign workers arrived in the country and 2.8 million left (table VI.6). As an average, therefore, for every ten workers newly recruited six left. However, there was a considerable variation from year to year, with a high sensitivity to the business cycle. At the time of the 1967 recession, when the total number of immigrant workers fell, the ratio went up to three departures for every arrival. The temporary character of much of this immigration is further revealed in the fact that, in September 1973, over 52 per cent of the foreign population had less than four years of residence, and only 16 per cent had been in the country for more than ten years.[35]

In other receiving countries, where a policy of encouraging the settlement and integration of the immigrants has been more widely applied (France, Sweden, Belgium, Luxembourg, the United Kingdom, for instance) the rate of turnover has certainly been considerably lower. However, return movements have occurred in considerable numbers. Often, either a temporary stay abroad is an original motivation of the emigrant, or the migrant may be pushed to return by improved conditions resulting from rapid economic growth in his home country, or by failure or disappointment with his initial sojourn abroad.

The temporary nature of such movements described above, with a short average stay of the migrant, has a number of implications for the economies of countries of both departure and destination.[36] For the receiving countries, the rotation of migrants, who tend to be predominantly males in the young adult age groups, has the positive implication of maintaining in the country a constantly renewed mass of people in the active age groups. But one of the substantial disadvantages of the rotation of the immigrant population is the necessity of recruiting from increasingly distant lands, which involves not only higher travel and training costs, but also high social costs of integrating into the national community people with different languages, religious practices and social approaches.

For the sending countries, the return of the emigrant after a short stay abroad has a number of consequences. Whether or not temporary emigration is beneficial to the sending country is a controversial issue. During the stay abroad, considerable short-term benefits accrue to the country of origin of the migrant, such as the fall in the cost of supporting the unemployed or the under-employed, and the very substantial remittances from abroad. With the return of the migrant, the foregone costs of raising him are not lost and the social repercussions of depopulation through emigration (with women, children and the old and senile left behind) are avoided. Also, the skills that the emigrants have acquired abroad, together with the savings taken from abroad, may stimulate economic and social progress in their home countries. However, recent research suggests that the economic benefits from temporary emigration are far from being certain, and may possibly be negative in the aggregate.[37] The emigrants who return may not be those who acquired a valuable skill, and a considerable waste may be involved in the use of their savings. Moreover, the temporary migrations into Europe have been substantially into the unskilled and semi-skilled sectors of the economies of the receiving countries, so that the returning migrant may still have to be trained after his return if he aspires to higher status positions.

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[33] In the service sector, 43 per cent of the workers had been in Switzerland for less than three years. See *La vie économique* (Berne), 47th year, May 1974, p. 260.

[34] Resident workers cover both people recruited on an annual basis (allowed to bring in their dependents after a varying period of residence) and those granted permanent establishment permits (not subject to any restrictions). The dependency ratio in these two groups is respectively about 0.5 to 1.0. The dependency ratio among seasonal workers is nil, since these are not allowed to bring in their dependents.

[35] *Wirtschaft und Statistik* (Wiesbaden), No. 4, 1974, p. 199.

[36] United Nations, *Economic Survey of Europe in 1965: The European Economy in 1965*, chapter II, pp. 80-82; B. Kayser, *Manpower movements and labour markets* (Paris, OECD, 1971); M. Livi-Bacci, ed., *The demographic and social pattern of emigration from the southern European countries* (Florence, Dipartimento Statistico Matematico, 1972).

C. Impact on the age and sex structure of populations

1. *Immigration and the population structure*

In the period 1950-1970, migration had a significant effect on the total size of the populations of a number of European receiving and sending countries, as shown in tables VI.2 and VI.3. However, the effects of migration on the age- and sex-composition of specific sectors of those populations were perhaps even more marked.

Migrants are predominantly young and in some cases predominantly males. This feature is less pronounced in countries, such as Belgium and the United Kingdom, in which a large proportion of the immigrants come with their families as permanent settlers. Generally there is a high concentration between the ages of 20 and 39, and this is the age group in the receiving countries that was depleted through the 1950s and into the 1960s by a long-established fertility decline. In terms of sex ratios, the tendency for males to predominate amongst immigrants also helped to offset the imbalances created in some countries by heavy war casualties. Comparisons between the age-sex composition of non-migrants and migrant components of populations in some of the significant receiving countries are illustrated in figure 15.

A summary of the proportions in the main age and sex groups in the national and immigrant population in the six main receiving countries is given in table VI.7. The most obvious feature emerging is that people aged 20-39 years account for almost one-half of the total foreign population in Sweden and Switzerland, and over 55 per cent in the Federal Republic of Germany.[38] Another impressive feature is the preponderance of males of these ages among aliens. Males aged 20-39 are as much as 37 per cent of the total foreign population in the Federal Republic of Germany, and between 25 and 28 per cent in France, Sweden and Switzerland, compared with a corresponding proportion of no more than 13 per cent among the native population.

Switzerland features the most extreme case: the 1970 census revealed that there were two foreigners for every ten Swiss, but the proportion in the age group 20-39 was as high as one in two for males and one in three for females.

Switzerland, sex and age structure of the population, 1970

(*Total population = 1,000*)

Age group	*Swiss*		*Aliens*	
	M	*F*	*M*	*F*
0-19	130	123	27	26
20-39	107	113	49	34
40-49	49	54	12	8
50-64	67	76	6	5
65+	45	64	2	3
TOTAL	1,000			

Source: Annuaire statistique de la Suisse (Berne) 1973.

The above figures reveal the very high dependence of this country on foreigners in the most active age groups. However, this dependence was even higher than these figures indicate: data on the resident population in the census do not cover about 200,000 seasonal and border-crossing workers, mostly young males. These workers would increase the total foreign population by some 20 per cent, and the number of young foreign males by as much as 50 per cent.

Table VI.7 also reveals an impressive difference in the upper ages between the national and alien populations in some of the receiving countries. In all countries shown, 28 to 34 per cent of the nationals are older than 50. In the Federal Republic of Germany and Switzerland, only 6 to 10 per cent of aliens belong to this age group. In Belgium, France and the United Kingdom, the differences in the share of old people between the native and alien population is less impressive because these three countries had a long-standing tradition of accepting immigration of entire families rather than bread-winners.[39]

The sex and age structure of the immigrant population, in all receiving countries, varies according to their place of origin. This reflects to a large extent the differences

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[37] W. R. Böhning, "Some thoughts on emigration from the Mediterranean basin", *International Labour Review* (Geneva), vol. 111, No. 3 (March 1975).

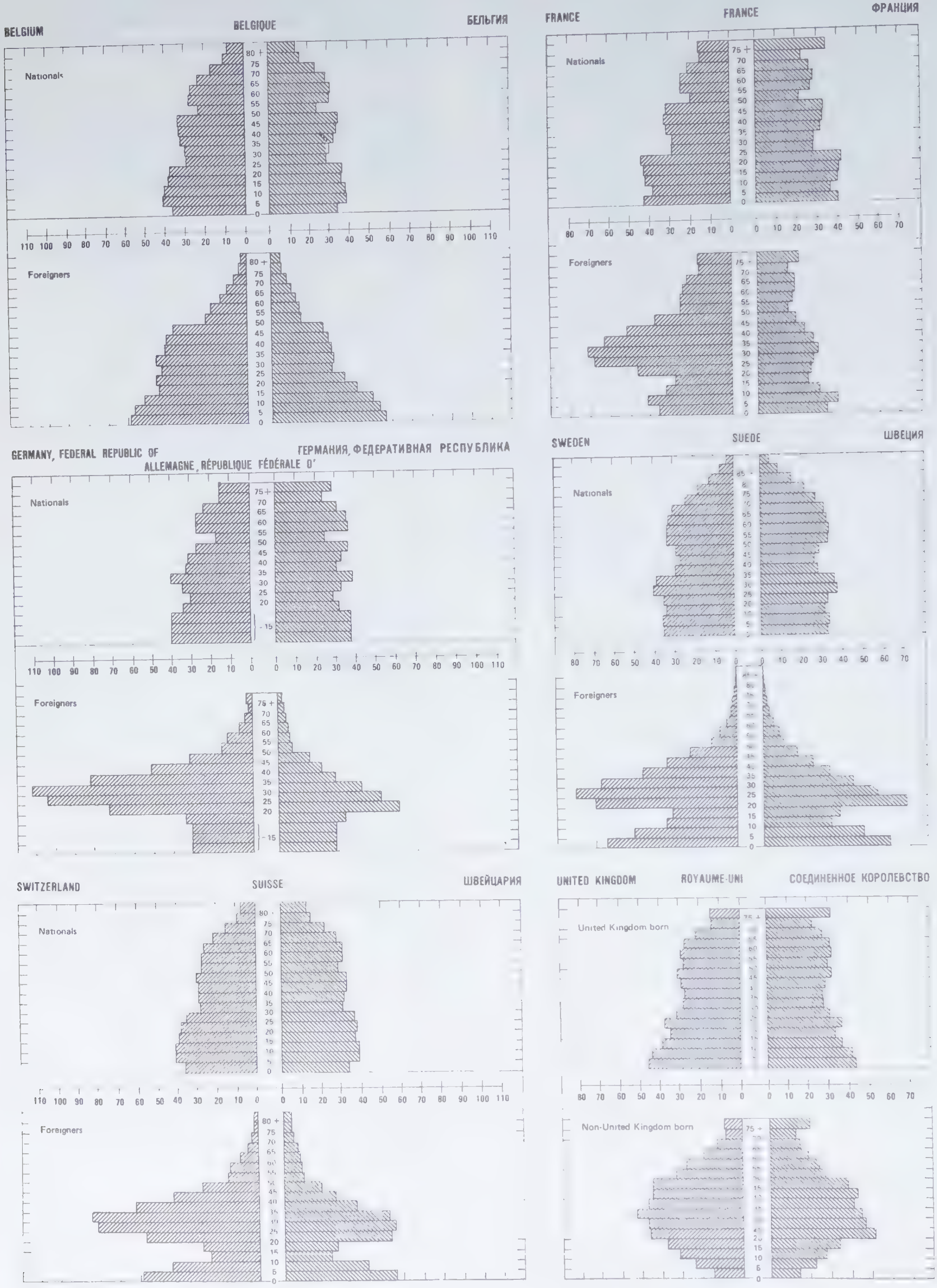
[38] In the Federal Republic of Germany, a significant contribution to the young groups in the national population was also made by German immigrants from the German Democratic Republic who are not considered as aliens. International Labour Office, *International Migration, 1945-1957*, Studies and Reports, New Series, No. 54 (Geneva, 1959), pp. 25-28.

[39] Also, in the United Kingdom the definition of the alien population based on country of birth is likely to augment the proportion of old people classified as aliens. Similarly, in Sweden data referring to foreign-born also show a high proportion of old people, and a much lower share of people under 20, than data referring to foreign nationals. *Folk- och bostadsräkningen 1970* (Stockholm, SOS, 1972), vol. 3; and *The effects of post-war external migration on population trends in Sweden* (Stockholm, SCB, 1972), p. 34.

FIGURE 15

Age and sex structure of national and foreign population in six main immigration countries, 1970 [a]

(Per thousand)



Sources: National population censuses.

NOTE. Data for the United Kingdom cover Great Britain only.

[a] 1968 for France, 1971 for the United Kingdom.

TABLE VI.7

Sex and age structure of native and alien population,[a] in six main receiving countries, 1970 [b]

(Rates per thousand)

Age groups	*Belgium, 1970*				*Sweden, 1970*				*France, 1968*			
	Belgians		*Foreigners*		*Swedish*		*Foreigners*		*French*		*Foreigners*	
	M	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*
0-19	155	148	213	204	139	132	183	183	165	159	138	130
20-39	129	129	176	128	135	130	264	204	133	132	249	113
40-49	66	69	78	55	62	63	58	43	64	66	91	43
50-64	78	86	52	42	96	98	26	24	68	77	75	52
65 + ...	56	83	23	28	64	80	6	8	51	84	55	55
TOTAL	1000		1000		1000		1000		1000		1000	

Age groups	*Switzerland, 1970*				*Germany, Federal Republic of, 1970*				*United Kingdom,[c] 1971*			
	Swiss		*Foreigners*		*Germans*		*Foreigners*		*UK born*		*Non-UK born*	
	M	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*
0-19	157	149	155	149	154	146	126	123	163	156	107	98
20-39	130	138	284	200	135	132	371	184	125	123	192	185
40-49	59	66	71	45	58	70	83	38	60	61	89	82
50-64	80	91	38	27	71	98	36	19	85	93	80	72
65 + ...	52	78	12	20	63	84	9	11	50	81	30	49
TOTAL	1000		1000		1000		1000		1000		1000	

Sources: National statistics.

[a] Population of foreign citizenship, except for the United Kingdom (people born outside the United Kingdom).

[b] 1968 for France, 1971 for the United Kingdom.

[c] Great Britain only.

in the character of immigration for the various ethnic groups: whether long-standing or recent immigration, the geographical distance, the ethnic difference, the intention of settling or not in the receiving countries and the facilities offered for integration, the importance of the turnover and the frequency of returns. For example, in France the age pyramid for Italians reflects an old stable immigration, based on family movements, rather than temporary workers: the proportion of old people has increased and there is a relative balance of sexes, even though the Italians of earlier immigration who have been granted French nationality are not covered. The age pyramid for Spanish immigrants also shows a large share of old people and is substantially symmetrical. The relatively large proportion of females may reflect the considerable recourse to female labour for domestic service. By contrast, immigration from Portugal and from Algeria and Morocco has been predominantly masculine and temporary.[40]

In the Federal Republic of Germany, the proportion of children and young people under the age of 20 years is relatively high for Spaniards and Greeks, and for Italians is actually higher than for German natives. On the other hand the proportion is extremely low for Yugoslavs and Turks, both groups of more recent immigration. For all aliens in this country there is a preponderance of young males, but this is most prominent in the case of Turks.

In Sweden, the age pyramids for immigrants born in Nordic countries and in the Federal Republic of Germany are not markedly different from that for Swedish natives. The age pyramids for southern Europeans reflect the more recent immigration, with a preponderance of young males.

In the United Kingdom, the age pyramid for Irish-born immigrants is almost as symmetrical as that of the native-born, but it shows a lower proportion of children and a higher share of both males and females in the most active age groups, between 20 and 49 years. The proportion of old people is also high, showing a long-standing immigration and a high degree of permanent settlement in the British community. By contrast, males predominate among immigrants born in the New Commonwealth countries.

Figure 16 and table VI.8 show the male/female ratio by age for the national and the alien populations in the six main countries of immigration. The extremely high ratio for immigrants corrects, in part, the low ratio for nationals. In Switzerland among nationals, females start to outnumber males in the age group 25-29, but because

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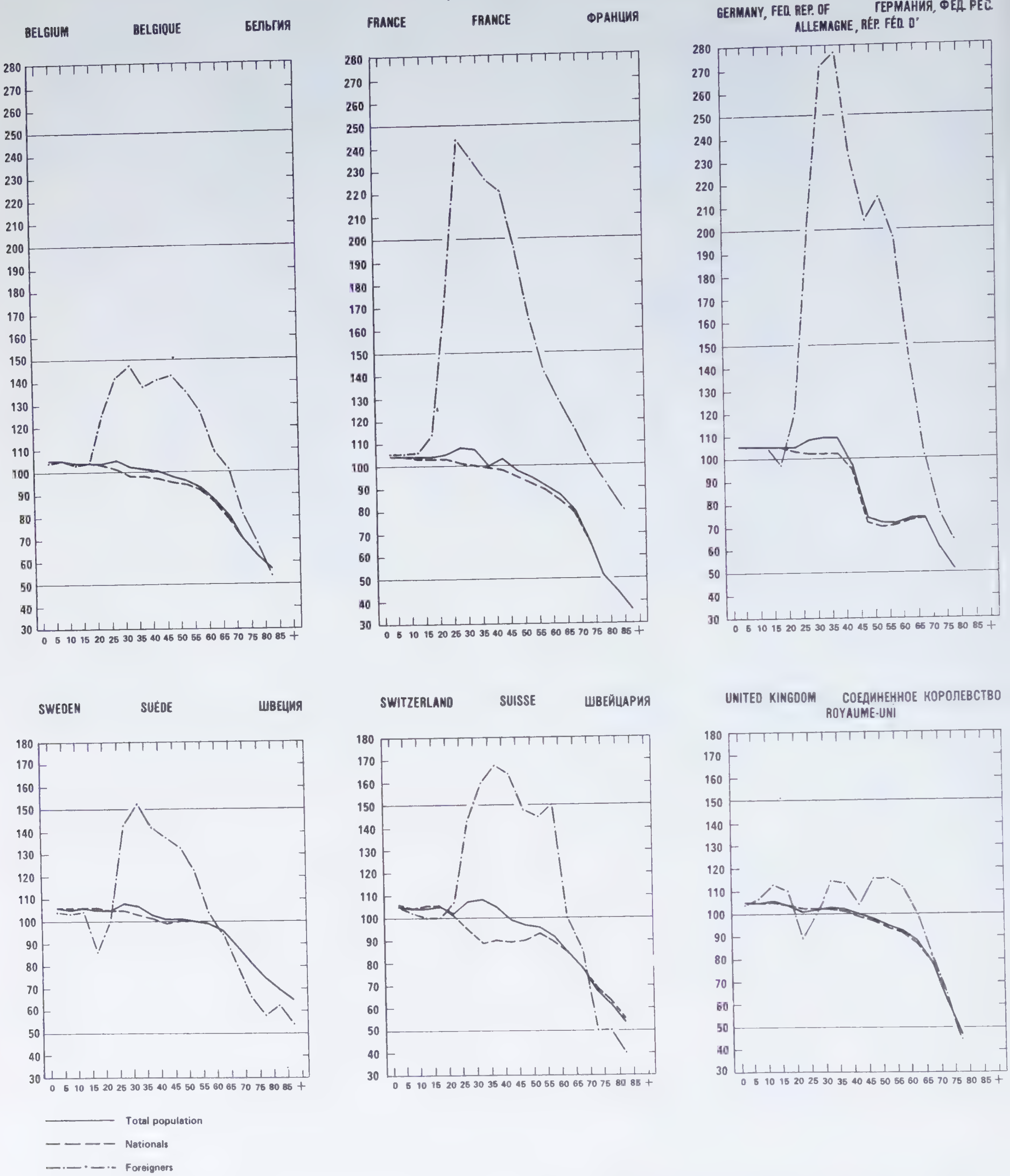
[40] O. Rabut, "Les étrangers en France", *Population*, 1973, No. 3, pp. 631-634. The temporary character of the Algerian migration is emphasized by M. Trebous in OECD, *Migration et développement. Le cas de l'Algérie* (Paris, 1970), pp. 61-66. The proportion of former emigrants in the present Algerian population is about one-quarter.

FIGURE 16

Male/female ratios by age, in the total, national and foreign populations, 1970 [a]

(Number of men per 100 women)



Sources: National population censuses.

NOTE. For the United Kingdom nationals refer to born in the United Kingdom, and foreigners to born outside the United Kingdom. All data cover Great Britain only.

[a] 1968 for France, 1971 for the United Kingdom.

TABLE VI.8

Sex ratio in the age groups between 20 and 44 in four receiving countries and four sending countries, 1970 [a]

	Receiving countries								Sending countries			
	Belgium		*France*		*Germany, Federal Republic of*		*Switzerland*					
Age groups	*With immi-grants*	*Without immi-grants*	*With immi-grants*	*Without immi-grants*	*With immi-grants*	*Without immi-grants*	*With immi-grants*	*Without immi-grants*	*Greece*	*Italy*	*Portugal*	*Spain*
20-24	104	103	105	103	105	103	102	101	107	104	90	101
25-29	105	101	108	101	108	102	107	95	95	102	87	100
30-34	102	98	107	100	109	102	108	89	90	99	88	97
35-39	101	98	105	99	109	102	105	90	93	98	90	99
40-44	100	97	103	98	98	95	100	89	94	97	90	97

Sources: Population censuses and estimates.

[a] 1971 for Greece, Italy and Portugal.

of the extremely high proportion of males among aliens, the number of males in the total population remains considerably higher than the number of females until the age of 40. The impact of the high male/female ratio among immigrants on the ratio for the total population is obviously less impressive in other receiving countries where the share of aliens in the population is much smaller.

2. *Immigration and natural population growth*

The impact of immigration on the natural population increase in the receiving countries varies according to a complex interaction of several factors: the age and sex composition of the migrants, the fertility pattern prevalent in their country of origin and/or social classes, their speed of acquisition of new fertility patterns, their average length of stay, and also the indirect effects of immigration on the fertility pattern of the native population.

The peculiar age composition of the immigrant population has an obvious direct impact on the natural population increase. Because of the prevalence of the young age-groups, the death rate among immigrants tends to be lower and the birth rate higher than among natives. Moreover, immigrants usually originate in countries and belong to social classes with a higher fertility rate than that of the non-migrants. However, when the temporary migration of bread-winners prevails over the permanent transfer of entire family groups, the potential effect of the young age and of high fertility rates of the immigrant population may be reduced.

Also, the high male/female ratio at marriageable ages among immigrants more than compensates in some of the receiving countries for the excess of females in those ages which prevails amongst non-migrants (table VI.8). As a result of immigration, a number of native women who would otherwise have had to remain single because of a shortage of men, are able to marry. In recent European experience, however, this factor has usually not been very strong: it may, at most, have resulted in a slight moderation in the decline of the birth rate. In France and Sweden, two countries which have traditionally encouraged the permanent settlement of the immigrants, the number of children born of a foreign father and a native mother is respectively only about 2 and 2.5 per cent of total births, but this figure ignores the impact of naturalizations. In the Federal Republic of Germany, the corresponding ratio is less than 1.5 per cent.

Figure 17 shows the separate impact of natives and foreigners on the total natural population increase in five receiving countries in recent years. The left-hand diagram indicates the natural increase in absolute numbers among natives and among foreigners. The right-hand diagram shows the contribution of natives and foreigners to the rate of natural increase for the whole country's population.

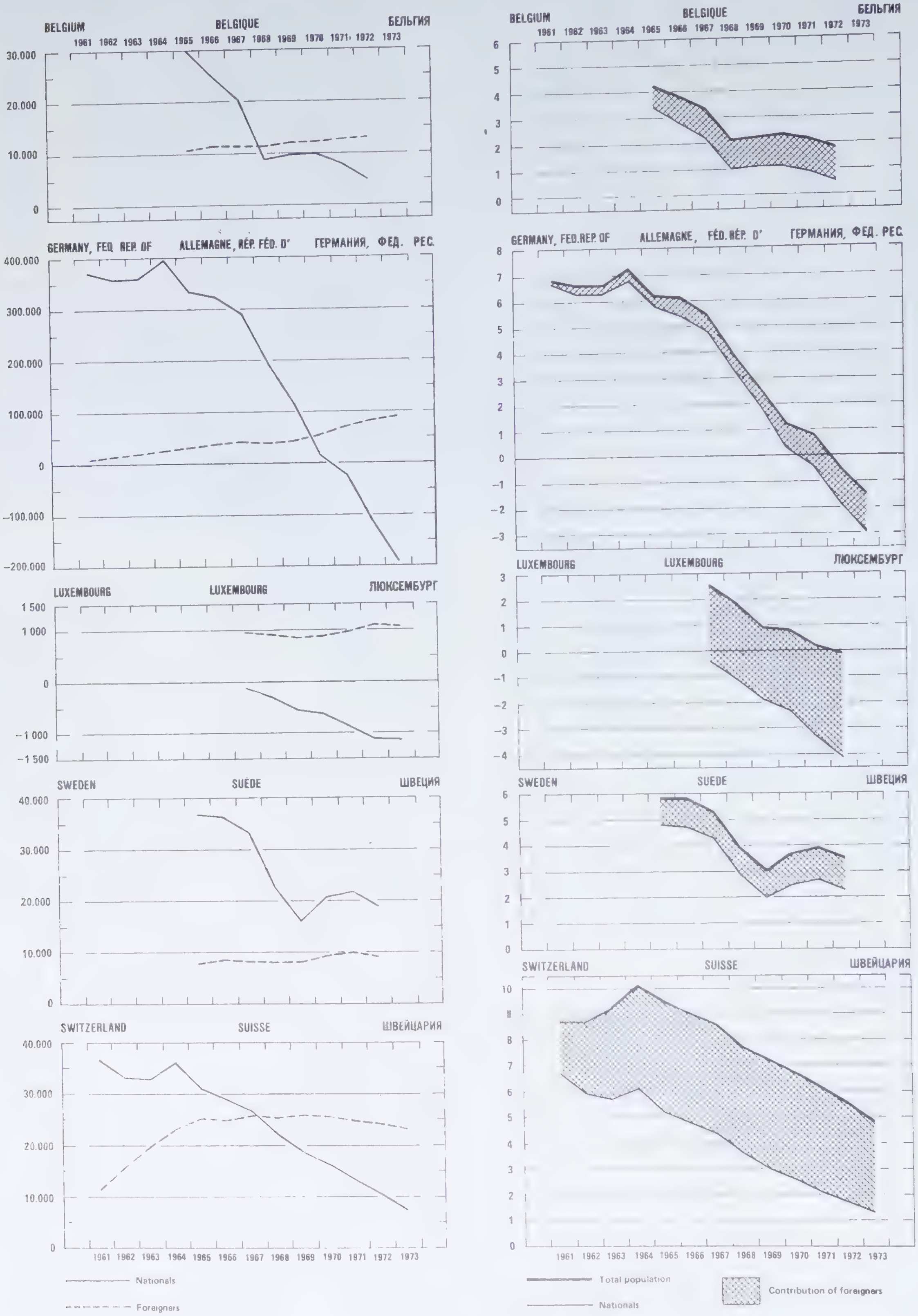
The natural growth (excess of births over deaths) among natives declined for all the five countries over most of the period covered, but in Belgium and Sweden the rate did show a slight rise towards the late 1960s or early 1970s. In Belgium this could have been due to the high birth rates of people of foreign origin who had previously been granted citizenship. The natural growth among foreigners generally tended to increase slightly or at least to keep steady, and only in Sweden did the natural increase among natives continue to remain higher than that of the foreign population. The natural increase among foreigners started to be higher than that of natives in 1967 in Switzerland, in 1968 in Belgium and in 1969 in the Federal Republic of Germany. An actual decline in native population began in 1967 in Luxembourg and in 1971 in the Federal Republic of Germany, and in both countries the higher natural increase among foreigners was no longer sufficient to offset the decrease in the native population by 1972. In Belgium and Switzerland the rate of natural increase among natives had fallen by then to negligible levels, respectively 0.5 and 1.1 per 1,000; in both countries, the bulk of the natural growth has recently been contributed by foreigners. The impact of the immigrants would probably be more marked if the contribution of those who, having been granted citizenship of the receiving country, were counted as natives. In Belgium and Switzerland foreigners represent respectively one-twelfth and one-sixth of the total population, but recently their contribution to natural growth has been about three-quarters of the total natural increase. In the Federal Republic of Germany and Luxembourg, as already indicated, the excess of births among foreigners was not sufficient to offset the steep decline of the native population. In these

FIGURE 17

Natural increase in the national and foreign populations in five immigration countries

(Absolute difference between births and deaths in numbers)

(Per thousand total population)



Sources: National vital statistics; United Nations, *Demographic Yearbook*, various years.

four countries, where the present age structure of the population is at present unfavourable to growth and the fertility of natives remains low, natural growth is likely to be lowered further or natural decrease is likely to be accelerated in the absence of substantial and continuing inputs of new settlers.

3. *Effects of emigration*

In the main sending countries of Europe, namely the countries of southern Europe, Finland and Ireland, the loss of population through emigration in the period 1950-1970 averaged about 7 per cent of the total initial population, but the pattern is dominated by the very much greater losses of about 20 per cent for Ireland and 25 per cent for Portugal. On average, emigration has been over 30 per cent of the natural population increase of the emigrant countries, but in the case of Ireland and Portugal it practically cancelled out the entire natural increase.[41]

The impact of emigration on the population is certainly greater than global figures would suggest. Migrants being predominantly men in the young and most active age groups, large-scale emigration may have resulted in adverse changes in the age and sex composition of the remaining population. The alteration of the sex balance may also have resulted in a decline in the birth rate. In the following an attempt is made to measure these effects.

The comparative development of the total population and of the population in the age group 20-44 between 1950 and 1970 in six main emigration countries was as follows:

Countries and periods	*Percentage change in*		
	Total population	*Males aged 20-44*	*Females aged 20-44*
Finland			
1950-1960	10.3	1.4	−4.1
1960-1970	3.4	15.2	8.6
Greece			
1950-1960	9.9	10.1	10.0
1960-1970	4.5	−2.3	−3.8
Ireland			
1951-1961	−4.8	−20.7	−16.2
1961-1971	5.7	7.9	4.0
Italy			
1951-1961	7.3	6.4	2.7
1961-1971	6.5	6.0	4.2
Portugal			
1950-1960	5.3	−0.5	2.4
1960-1971	−3.1	−11.9	−8.7
Spain			
1950-1960	8.6	5.4	1.3
1960-1970	12.1	6.7	3.8

Sources: United Nations, *Demographic Yearbook*, various years; national population censuses.

The age and sex structures of the populations are, of course, affected by factors other than migration, such as fluctuations in the numbers of births and deaths. However, in some cases the effects of emigration on the size of population aged 20-44 seems clear. In Ireland in the 1950s, the population in this age group declined much faster than the total population. The same happened in Portugal in the 1960s. In Greece in the 1960s, the population aged 20-44 declined while the total population increased, as for males in Portugal in the 1950s. In all the above cases the share of the population aged 20-44 in the total declined considerably. In Spain, where all the changes are positive, the population aged 20-44 grew considerably less than the total, especially in the 1960s. In Italy, the effect was less marked. In Finland, the most active age group was greatly depleted in the 1950s, but substantially recovered again in the 1960s.

Between 1950 and 1970, the male/female ratio in the age group 20-44 deteriorated seriously only in Portugal, where the fall was steep. In the other sending countries, the sex ratio in this age group actually increased, suggesting that over the period under review an increasing proportion of emigrants remaining abroad were women. However, in spite of the increase, the sex ratio in 1970 was still much lower than that of the receiving countries. Table VI.8 shows the comparison between the sex ratios in the five-year age groups between 20 and 44 in selected receiving and sending countries: the reduction of the male ratio in sending countries and the increase of that of the receiving countries emerges clearly.

Emigration does not appear to have had a marked effect on birth rates. In Ireland the birth rate actually kept remarkably stable throughout the period at between 21 and 22 per thousand. In the other countries the birth rate declined moderately, but perhaps no more than could be expected as an effect of economic and social development. Only in Portugal does it seem that the abrupt fall in the birth rate (from over 24 per thousand in the early 1960s to 20 per thousand in 1970) may have been to a large extent due to emigration. Altogether, in spite of large-scale emigration, the natural population increase in the sending countries remains high. The moderate effect of emigration on the natural growth of the sending countries may be to a certain extent due to the temporary type of migration prevailing with a high rate of returns.

D. Retrospect and prospects

This chapter has shown that international migration as it has affected the nations of Europe over the past thirty-five years or so has assumed a complex and changing pattern. The most traditional element has been the continued loss of population from the European continent to overseas countries, estimated to have been around 7 million between 1951 and 1970. But two elements that were emerging in the pre-war years have been strengthened: the diminishing role of northern and western Europe as a source of overseas emigrants and the virtual elimination of Latin America as an immigrant area. Moreover, where emigrants left northern and central Europe for overseas destinations, the gaps were often filled from other sources, either from within or from beyond Europe. This complex interaction of sending and receiving from different sources was best illustrated in the case of the United Kingdom. Increasingly also the main sources of the sending areas to overseas destinations shifted to the countries of southern Europe.

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[41] Between 1950 and 1970 emigration from eastern Europe generally accounted for 4 per cent of the initial population in 1950 and was equivalent to 20 per cent of the natural increase, but in the case of the German Democratic Republic it was 13 per cent of the initial population and over double the natural increase.

Tradition also played its role in the intra-continental movement because, as emphasized at the beginning of this chapter, intra-continental movements had assumed very substantial proportions in the 1920s and 1930s, particularly between eastern and western Europe. But what appeared to be developing was a consistently increasing pull, associated with both demographic and economic factors, from the peripheral countries of Europe to its northern and particularly to its central areas. In the early post-war years the demand for labour inputs beyond national demographic capacity was widespread, but by the late 1950s this demand was being concentrated in a few countries, particularly the Federal Republic of Germany, France and Switzerland. Between 1950 and 1970, western Europe had a net gain of almost 9 million immigrants, drawn to some degree from eastern Europe, but predominantly and increasingly drawn from southern Europe. By the 1960s the pull to central Europe was stretching to Africa and Turkey.

This great inward-turning movement seemed to fit the demographic factors, with north and central Europe filling the gaps torn in their labour forces by their low national fertilities, particularly during the 1930s, and in many cases by the events of the two world wars, and with the new labour coming from the young cohorts of southern Europe and beyond, which were expanding as a result of their own high fertility and falling mortality beyond the capacities of their national economies to absorb them all. By the 1960s it appeared as if the movement might be attaining some of the characteristics of the flight from northern and central Europe itself to North America of almost a century earlier. It could also be seen as a classic illustration at the international level of the processes of urbanization: essentially the flight from rural and peasant areas to urban and industrial employment.

Moreover the right of free movement in search of employment had been formally recognized amongst the members of EEC, but as this group of countries consisted mainly of those with their own national labour shortages and with universally high levels of living, the removal of all restrictions on movement brought little change, except that it facilitated the flow towards western and northern Europe from Italy which had been going on steadily for some time.

The movement from southern to central Europe expanded throughout the 1960s, with some short-run cyclical fluctuations. At the same time the rates of increase in the labour force entries in the indigenous populations of the countries receiving the immigrants were also beginning to rise as baby boom cohorts grew to employable age. Modest restraints began to be imposed by the main receiving countries upon the stream from the south and, following the energy crisis and the downturns in economic activity, the recruitment of new workers was stopped completely in 1973. There was also increasing concern with such non-economic aspects of large-scale immigration flows as the impact of new settlers on social costs and cultural and social problems of integration arising from residential concentrations, inadequate language ability and the high male ratio amongst the immigrants. In the sending countries there were also signs of growing concern about the possible depletion of their own stocks of skilled workers through emigration, and of increased attention to the possibilities of more intensive immigration of capital instead of the emigration of workers.[42]

At present, in 1975, there is therefore a hiatus in intra-continental migration, accompanied by considerable re-appraisal of the benefits and costs of traditional policies of labour migration and of the social implications of migration flows based on family movement rather than predominantly worker movement. Thus, in such a period of change and review, prediction of migration flows of the future is perhaps even more difficult than the assessment of future fertility. And this may help to explain why no country allocated a major role to migration as one of its projection variables, as is shown in chapter VII below.

As the present study's major purpose is to review the demographic trends and patterns of Europe, it is not possible to enter here into a discussion of the economic, social and cultural aspects that may be involved in determining future levels of immigration and emigration, but it is appropriate to draw attention to demographic factors that have some bearing on the matter.

First, the major disturbances to age structure that were so apparent in a number of the immigrant-receiving countries are not present to the same degree for the moment: ages up to about 45 years in most countries at present are the product essentially of normal sex ratios at birth and differential mortality schedules thereafter, rather than of any external factor, such as war. Secondly, in the immediate future many countries will be receiving into their workforces the products of the baby boom, which will have an effect directly the opposite to that of the 1950s when the depleted birth cohorts of the 1930s were reaching employable age. These factors may tend to reduce the need for immigration, but the entry of the baby boom cohorts will be quite short-lived and the effect of the widespread declines in fertility in northern and western Europe will begin to be felt. There seem certain to be fewer young people aged 15-19 years in western Europe in the last decade of this century than there were in 1970. In the case of eastern Europe this will hold from 1970 onwards.

Thus demographic factors similar to those operating in the 1950s could be at work again by the 1980s in highly industrialized economies geared to export industries as well as domestic consumption. Also, the economic impact of the ageing process may be a further factor encouraging measures to prime the growth of the workforces of western European countries through immigration. At the same time, on the supply side of potential immigrants, southern Europe will still be experiencing increases of young persons coming of employable ages, but at reducing rates of growth as the century advances, so that, if major demands are made again in the future by the north and west, the search may, as recently, be looking beyond Europe again towards Turkey and possibly North Africa, where rapid growth seems inevitable for decades ahead.

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[42] For a discussion on some of these questions, see W. R. Böhning, "Some thoughts on emigration from the Mediterranean basin", *International Labour Review* (Geneva), vol. 111, No. 3 (March 1975), p. 251.

Intra-continental movement has been of long standing and of immense proportions and it is perhaps unwarranted to conclude from the present break in trend, which has occurred in the face of the worst economic downturn since the 1930s, that longer run forces will not re-assert themselves, at least to some degree. If they do, however, it may be in a different climate of opinion —one which accepts the principles of slow growth or a stationary demographic situation in the long term, and which wishes to see both more extensive migration of capital and more attention to the rights and roles of families in migration than has been the case with predominantly temporary worker movement.

Chapter VII

EXPECTED TRENDS IN POPULATION SIZE AND SEX-AGE STRUCTURE, 1970-2000

A. Introduction

The objectives of this chapter are:

— to describe and compare the variants embodied in the national population projections based on the 1970 census round and covering Europe and the USSR which were received from individual countries or otherwise prepared for this study.

— to evaluate, in the light of the data presented and analysed in the preceding chapters, the assumptions used in these variants and the conclusions that flow from them regarding total national and sub-regional growth until the year 2000.

— on the basis of a nationally or otherwise selected "most likely" variant, to describe changes in the size and sex-age structure of populations between 1970 and 2000 in individual countries and in the main sub-regions of Europe.

— on the basis of two assumed "theoretical" variants, one assuming the onset of fertility slightly below replacement level (GRR = 1.00) and the other assuming a further marked decline (to GRR = 0.75), to describe and compare changes in the size, natural growth rates and sex-age structure of populations in the main regions of Europe, in this instance to the year 2030.

Projections incorporate a degree of speculation, even in the short run, for the science of population analysis has not yet acquired the prescience of prediction. The areas of speculation must widen the further the projection moves in time from its base; but with the modern European-type of population (barring such disastrous interventions as war) there are significant elements of virtual certainty for a considerable way ahead. For example, the entrants to the work force fifteen years ahead are already born, and as the extremely low mortality patterns described in chapter III mean that 90 per cent or more infants will live to age 50, and as there seems very little likelihood of major changes upwards or downwards in life expectancies, relatively certain assessments can be made, even up to about thirty years ahead, regarding the size and structure of the future adult population. The major speculative elements lie rather in the assessment of the numbers of children and young people, which must depend upon future levels of nuptiality and fertility.

These are the areas of change at the moment which make extremely difficult the selection of realistic assumptions about the future. However, judging from the material presented in chapters IV and V, a conclusion which does seem to emerge is that, for most countries, the trend in terms of total fertility rates still seems to be downwards, and the important question is how fast will the decline be and how far will it go. The exceptions for the moment, which currently show a slight rise in crude birth rates and total fertility rates, are Czechoslovakia, Hungary and Poland (see chapter V).

As the projections for most of the twenty-five countries were prepared in 1973 and 1974, and all between 1971 and 1974, they may be taken to incorporate data which reflect some of the substantial changes in demographic trends that had already occurred in many parts of Europe by these dates. Certainly some countries were very much aware of the problems they faced at such a time in choosing realistic assumptions. For example, the Irish provided only one variant and emphasized that the choice of assumptions was currently very difficult, and the German Democratic Republic emphasized that, in 1974, projections based on the 1971 population census were already outdated by recent trends.

Further changes, some quite dramatic and most of them downward, have occurred since the projections were prepared, and some of the most likely variants used in section C of this chapter may even now appear to be on the high side. Consequently, it has been thought desirable to examine the longer-range implications, not only of low and stable fertility patterns, but also of further substantial declines in fertility to levels well below replacement level as measured by reproduction rates. These hypothetical aspects, together with the assumptions on which they are based, are discussed in section D. The extension of these theoretical low variants to the year 2030 introduces a time-span long enough to see how the populations of the regions of Europe and the USSR would react in terms of growth and sex-age patterns as they move from their current position, in which in most cases their age structures still have a substantial impetus of growth,[1] to one in which those structures will be essentially those of stable populations. Thus this longer-run perspective is to be treated as a theoretical model, not in any sense as a prediction.

B. Data sources, methods and a summary of results

1. *The sources and the nature of the data*

The basic assumptions and projections presented in this section and analysed further in terms of the most likely variant in section C of this chapter, are derived from a number of sources. For the most part they are national projections based on the 1970 round of population censuses and prepared between 1971 and 1974, but mostly in 1973 and 1974. In the four cases of Albania, the German Democratic Republic, Italy [2] and the USSR, the sets of projections with four fertility assumptions are those prepared in 1974 by the United Nations Population Division. For the remaining 21 countries, published projections were available for six of them, and in 15 cases the Secretariat benefited from advance tabulations supplied by the Statistical Offices concerned.[3]

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[1] For a thorough treatment of this aspect see T. Frejka, *The Future of Population Growth, Alternative Paths to Equilibrium* (New York, Population Council, John Wiley and Sons, 1973).

Not all the materials available from these 21 countries conformed precisely with the pattern of four variants —high, medium, low and a benchmark variant of constant fertility—as recommended in 1971 by the Conference of European Statisticians;[4] but the projections included four fertility variants for fourteen countries, three variants for three, two variants for six and one variant for the remaining two. Whenever possible each country's selection of its own most likely variant was accepted for the detailed analysis presented in section C of this chapter, but where no such self-selection was made, the middle variant was as a rule accepted as the most likely. However, rather arbitrary decisions had to be made where either two or four variants had been presented, and generally the variant which moved closest to an ultimate fertility pattern of approximately replacement level was selected.

The treatment of international migration raised some problems. In all, eleven countries provided projections in which at least one variant included a level of migration, six assuming net emigration (Finland, Greece, Ireland, Italy, Spain, United Kingdom), and five assuming net immigration (Belgium, Denmark, France, Sweden, Switzerland). All assumed migration to be of diminishing significance. Some of the countries in which migration has been a particularly significant factor in past growth, either positively (the Federal Republic of Germany) or negatively (Portugal), exclude this factor from their projections. In the light of this variable treatment of migration, it was decided to exclude international migration from the most likely assumption, except for those countries in which migration was already incorporated in all the variants offered. The four so treated are Greece, Italy, Ireland and Switzerland, for which the migration assumptions are set out in table VII.1.

With regard to mortality, a single assumption was made for all countries, excepting Yugoslavia which offered three mortality variants in which, however, the differences were very slight. Generally the assumptions were towards slow improvements in the expectations of life, but four countries (Austria, Federal Republic of Germany, Hungary and Spain) assumed a constant mortality level for the whole projection period, and the Netherlands assumed a slight decline in the life expectation of males—a situation postulated as possible from the evidence analysed in chapter III.

The component method, using single or five-year age data, with births calculated by the application of ASFRs appropriate to predetermined levels of GRRs, and with the assumed levels of mortality applied to each time interval, was applied in most cases. However, in a few countries different methods, including cohort analyses, were used. The Bulgarian estimates were based upon trends in general fertility rate. The French estimates, based on cohort trends, assumed a constant average completed family size of the levels of 2.0 and 2.4 children per couple, and account was also taken of the trends in nuptiality to calculate the expected numbers of births. The United Kingdom also based its estimates on a very close analysis of marriage trends, and the Netherlands figures for future fertility were based upon both a separate analysis of the fertility of married women by marriage duration and the ASFRs of women out of wedlock. Ireland based its assessments on declining marriage-duration fertility rates. For comparative purposes, however, projections based upon the simpler ASFR and GRR approach had to remain the basis of the presentation and, where these were not given, approximate estimates of ASFRs and GRRs were made where possible.

Finally, the five-year periods on which many of the tables are based are not exactly the same over all countries. They cover periods from 1 January at time t to 1 January at time $t + 5$, or from 1 July at time t to 1 July at time $t + 5$. Moreover, the periods cover calendar years ending in some cases in 0 and 4, and in others 5 and 9, 1 and 5, or 6 and 10. These differences have a negligible significance since the analysis deals mainly with five-yearly trends. The total figures by subregions therefore present populations around 1970, 1975, etc., rather than at a precise point in each year.

2. *An over-view of the results*

Table VII.1 presents, in alphabetical order, a summary of the assumptions and of the total results of the projections of the 25 countries included in this study. The notation and order of each variant remain as submitted: to standardize the notation and rank order would tend to blur some of the priorities implied in each country's schedule as it was presented. The variant nominated by each country or otherwise selected as the most likely is marked in table VII.1 by an asterisk. This single variant for each country is used for the detailed analysis which follows in section C.

Little comment is necessary upon the mortality schedules shown in table VII.1 (and in more detail in table VII.3). Chapter III hinted at the possibility of the long-term trend

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[2] Projections up to 1985 were received from Italy by the Secretariat, but too late to be incorporated in the analysis for this study. However, a comparison between these new data and the figures based on the assumptions made by the Population Division of the United Nations Secretariat is drawn in foot-note 20 of this chapter.

[3] For details of these sources see notes to table VII.1. The reader should be aware that the sets of projections presented in this volume for analytical purposes are not necessarily identical with the official United Nations series published by the Department of Economic and Social Affairs (whose latest figures are those issued in March 1975 as a working paper (ESA/P/WP.53) under the title "World Population Prospects, 1970-2000, as assessed in 1973").

[4] See recommendations in the report by the Conference of European Statisticians of the Meeting on Demographic Projections, Geneva, 15-19 March 1971 (Conf. Eur. Stats/WG.35/5).

TABLE VII.1

An over-view of population projections referred to in the present study

Country	Variant reference	Fertility assumptions	Gross reproduction rates		Mortality assumptions	Expectation of life at birth (years)			Migration assumptions	Total population size:		
			1970-1975	1995-2000		Around:	1970	2000		1970 (Millions)	2000 (Millions)	Index numbers 1970 = 100
Albania	Low	Declining ASFR	2.310	1.140	Declining mortality	Males Females	67.2 69.9	70.3 73.4	Nil	2.2	4.0	182
	Medium*	Declining ASFR	2.370	1.280	As above	As above			Nil	2.2	4.3	196
	High	Increase in fertility rate of 15-19 age group until 1985. Declining ASFR in remaining age groups	2.410	1.470	As above	As above			Nil	2.2	4.5	204
	Constant fertility	Constant ASFR	2.430	2.430	As above	As above			Nil	2.2	5.2	236
Austria	1	Constant ASFR as in 1972	1.053	1.026	Constant	Males Females	66.6 73.7	66.6 75.7	Nil	7.4	7.8	105
	2*	Declining ASFR	1.042	0.908	Constant	As above			Nil	7.4	7.5	101
Belgium	1	Constant ASFR	1.089[a]	1.089	Constant at the 1970 level	Males Females	67.7 73.5	. . . .	Nil	9.7	10.4	107
	2*	ASFR will decline until 1974 and will remain constant afterwards	1.089[a]	0.930	Declining until 1974; constant afterwards		. .	. .	Nil	9.7	10.0	103
	3	As above	As above		As above		. .	. .	Net migrants: +10,000 per year until 1974, nil afterwards	9.7	9.9[b]	
Bulgaria	A	General fertility rate to increase from 62.6 to 77.0	. .	. .	Infant mortality to decline from 28.3 per 1,000 in 1968 to 14.0 per thousand in 2000. Declining mortality in all age groups	Males Females	69.2 72.7	71.6 75.7	Nil	8.5	10.1	119
	B	General fertility rate to increase from 62.6 to 72.0	. .	. .		As above			Nil	8.5	9.9	117
	C	General fertility rate to increase from 62.6 to 67.0	. .	. .		As above			Nil	8.5	9.7	114
	D*	General fertility rate to remain constant	. .	. .		As above			Nil	8.5	9.6	113

Czechoslovakia	High	Constant ASFR at assumed 1970-1975 level	1.454	1.454	Declining mortality	Males Females	69.9 73.9	68.7 74.7	Nil	14.4	19.2	133
	Medium	As above	1.149	1.149	As above	As above			Nil	14.4	17.0	118
	Low	As above	0.984	0.984	As above	As above			Nil	14.4	15.6	108
	Constant* fertility	As above	1.016	1.016	As above	As above			Nil	14.4	15.8	110
Denmark	1*	Constant duration-specific marital fertility. Constant age-specific illegitime fertility	0.975	1.072	Declining mortality	Males Females	70.5 75.2	71.4 75.9	Nil	4.9	5.5	112
	2	As above	As above		As above	As above			Net migrants: +5,000 per year	4.9	5.6	114
Finland	Low	Declining AFSR until 1985, rising in all age groups afterwards	0.800	0.720	Declining mortality until 1985, constant afterwards	Males Females	66.5 74.2	66.8 74.5	Net migrants (in thousands) during consecutive five-year periods: –46, –30, –25, –25, –25, –25	4.6	4.3	94
	Medium 1	Declining ASFR until 1980, constant in ages 30 and over afterwards	0.820	0.730	As above	As above			Net migrants (in thousands) during consecutive five-year periods: –44 (1970-1975), –30 (1975-1980), –25 (1980-1985), nil afterwards	4.6	4.5	98
	Medium 2*	Declining ASFR until 1985, constant in all age groups afterwards	0.820	0.730	As above	As above			Nil	4.6	4.6	100
	High	Fertility rising in age group 15-34 until 1990, constant afterwards. Declining ASFR among women 35 and over	0.820	0.840	As above	As above			As in low variant	4.6	4.6	100
	Constant fertility	Constant ASFR	0.790	0.790	As above	As above			As in low variant	4.6	4.5	98
France	1	Average number of children per couple to remain constant at 2.4 level after 1976. Assumed increase from 2.25 level in 1970	1.170	1.250	Declining mortality	Males Females	68.9 75.2	73.2 77.9	Nil	50.5	63.6	126
	2	As above	As above		As above	As above			Net migrants: +135,000 per year	50.5	59.0^b	. .

TABLE VII.1 (*continued*)

An over-view of population projections referred to in the present study

Country	*Variant reference*	*Fertility assumptions*	*Gross reproduction rates*		*Mortality assumptions*	*Expectation of life at birth (years)*			*Migration assumptions*	*Total population size:*		
			1970-1975	*1995-2000*		*Around*	*1970*	*2000*		*1970* *Millions*	*2000* *Millions*	*Index numbers 1970 = 100*
	3*	Average number of children per couple to remain constant at 2.0 level after 1985. Declining from 2.25 level in 1970	1.170	1.040	As above	As above			Nil	50.5	59.6	118
	4	As above	As above		As above	As above			Net migrants: +135,000 per year	50.5	57.7[b]	. .
German Democratic Republic	High	Constant percentage distribution of ASFR. Changes in total fertility	1.050	1.040	Declining mortality	Males Females	70.0 75.3	72.0 77.5	Nil	17.1	18.5	108
	Medium*	As above	1.020	1.010	As above	As above			Nil	17.1	18.2	106
	Low	As above	1.020	0.970	As above	As above			Nil	17.1	18.1	106
	Constant fertility	Constant percentage distribution of ASFR and constant total fertility	1.057	1.057	As above	As above			Nil	17.1	18.7	109
Germany, Federal Republic of	A	Changes in ASFR until 1975. Constant GRR afterwards	0.871	0.757	Constant at 1967/1969 life-tables level	Males Females	67.4 73.5	67.4 73.5	Nil after 1971	61.0	56.8	93
	B*	As above	0.887	0.838	As above	As above			Nil after 1971	61.0	58.7	96
Greece	*	Declining ASFR except in age group 15-19 (increase) and in age group 20-24 (increase until 1990 and afterwards constant at lower level), and age group 25-29 (up-and-down changes)	1.145	1.109	Declining until 1980 and constant afterwards	Males Females	70.1 73.8	72.3 75.9	−0.51 per cent per year until 1975; nil afterwards	8.8	10.0	114
Hungary	A Constant fertility and mortality	Constant ASFR of 1971	0.927	0.927	Constant	Males Females	66.0 72.1	66.0 72.1	Nil	10.3	10.5	102
	B Medium*	Changes in ASFR until 1990, then constant	0.947	1.006	As above	As above			Nil	10.3	10.8	105
	C High	ASFR: 1972-1976 as in 1971, 1977-1982 as in 1968 and 1983-2000 as in 1958	0.927	1.045	As above	As above			Nil	10.3	10.9	106

Ireland	*	Declining marriage-duration fertility rates: 1 per cent per year for marriages of under 5 years and 2 per cent per year for higher durations	. .	. .	Declining until 1991, constant afterwards	Males Females	69.3 74.1	71.9 76.5	Nil in the period 1971-1976 and −5,000 per year afterwards	3.0	4.3	143
Italy	Low	Declining ASFR until 1955 and then increase	1.090	0.950	Declining mortality	Males Females	69.2 75.1	72.0 77.0	Net migrants: the same in all variants: 1970-1975: −50,000, 1976-1980: −37,000, 1981-1985: −32,500, 1986-1990: −30,000, 1991-1995: −27,000, 1996-2000: −25,000	53.6	59.8	112
	Medium*	Declining ASFR	1.110	1.030	As above	As above				53.6	61.4	115
	High	Declining ASFR until 1990 and then constant	1.120	1.100	As above	As above				53.6	62.7	117
	Constant fertility	Constant ASFR	1.130	1.130	As above	As above				53.6	63.3	118
Netherlands	A*	Decline in average number of live-born children from 2.157 in 1970-1975 to 2.138 in 1980	. .	. .	Changes in mortality based on the analysis of death causes	Males Females	70.6 76.3	69.5 76.6	Nil	13.0	16.1	124
	B	Decline in average number of live-born children from 1.978 in 1970-1975 to 1.946 in 1980	. .	. .	As above	As above			Nil	13.0	16.1	119
Norway	A	Constant at the level of 1969-1970	. .	. .	Constant at the 1966-1968 level except infant mortality	Males Females	71.0 77.5	71.0 77.5	Nil	3.9	4.8	123
	B	Declining ASFR until 1971, constant afterwards	. .	. .	As above	As above			Nil	3.9	4.5	115
	C*	Declining ASFR until 1972, constant afterwards	. .	. .	As above	As above			Nil	3.9	4.4	113
	D	Declining ASFR until 1973, constant afterwards	. .	. .	As above	As above			Nil	3.9	4.3	110
Poland	High	Changes in ASFR	1.057	1.056	Declining mortality	Males Females	67.2 73.2	71.8 76.4	Nil	32.5	40.5	125
	Medium*	As above	1.024	0.905	As above	As above			Nil	32.5	38.5	119
	Low	As above	1.024	0.813	As above	As above			Nil	32.5	37.4	115
Portugal	Low I	Constant ASFR	1.260	1.260[c]	Constant mortality	Males Females	64.4 70.5	64.4[c] 70.5[c]	Nil	8.9	9.7[d]	. .
	Medium II	Declining ASFR until 1980	1.260	1.180[c]	As above	As above			Nil	8.9	9.7[d]	. .
	High III	Constant ASFR	1.260	1.260[c]	Declining until 1980, constant afterwards	Males Females	64.4 70.5	65.6[c] 72.0[c]	Nil	8.9	9.7[d]	. .

TABLE VII.1 *(concluded)*

An over-view of population projections referred to in the present study

Country	Variant reference	Fertility assumptions	Gross reproduction rates		Mortality assumptions	Expectation of life at birth (years)			Migration assumptions	Total population size:		
			1970-1975	1995-2000		Around	1970	2000		1970 (Millions)	2000 (Millions)	Index numbers 1970 = 100
	* IV	Declining ASFR until 1980. Constant afterwards	1.260	1.180[c]	Declining until 1980	As above			Nil	8.9	11.3	127
Romania	A* Moderate	Changes in ASFR until 1975, then constant	1.270	1.200	Declining mortality	Males Females	65.1 69.5	71.2 75.0	Nil	20.2	25.6	127
	B High	Changes in ASFR	1.270	1.410	As above	As above			Nil	20.2	27.8	138
Spain	A-1	ASFR increasing in the middle-age groups until 1990, then declining	1.421	1.426	Constant mortality	Males Females	69.6 74.7	69.6 74.7	Nil	34.0	46.8	138
	A-2	As above	1.421	1.426	As above	As above			Net migration: −20,000 per year	34.0	46.1	136
	B-1*	GRR to decrease by 1.5 per cent per year	1.404	1.310	As above	As above			Nil	34.0	45.4	134
	B-2	As above	1.404	1.310	As above	As above			Net migration: −30,000 per year	34.0	44.4	131
	B-3	As above	1.404	1.310	As above	As above			Net migration: −30,000 per year until 1985, −20,000 per year afterwards	34.0	44.6	131
Sweden	A	Constant ASFR	0.970	0.970	Declining mortality (2 per cent per year) for children under 5 years of age until 1985	Males Females	72.0 76.9	72.3 78.2	Net migrants: +20,000 per year	8.0	9.2	115
	B*	As above	0.970	0.970	Declining mortality (1 per cent per year) for women aged 45 and over	As above			Nil	8.0	8.4	105
Switzerland	A	Increase in ASFR among women aged 20-29	0.890	0.950	Declining mortality	Males Females	70.0 75.1	73.0 78.9	Net migration: +4,600 naturalized immigrants per year	5.2	5.8	112
	B	As above	As above		As above	As above			As above, plus 730,000 migrant workers (constant level)	6.3	7.1	113

	C*	Declining ASFR (except in age group 15-24)	0.920	0.820	As above	As above			Net migration: +4,600 naturalized immigrants per year	5.2	5.6	108
	D	As above	As above		As above	As above			As above, plus 730,000 migrant workers (constant level)	6.3	6.9	110
United Kingdom	Low	Declining ASFR until 1975, constant afterwards	1.110	1.020	Declining mortality	Males Females	69.1 75.3	71.6 78.0	Nil	55.7	60.7	109
	Medium 1*	Decline in ASFR	1.160	1.130	As above	As above			Nil	55.7	64.1	115
	Medium 2	Constant ASFR for nationals and migrants	1.170	1.140	As above	As above			Net migrants: −50,000 per year	55.7	62.8	113
	High	Rising ASFR	1.190	1.370	As above	As above			Nil	55.7	68.6	123
USSR	Low	Declining ASFR	1.170	1.100	Declining mortality	Males Females	66.5 74.3	69.5 76.5	Nil	242.8	311.2	128
	Medium*	Rising ASFR until 1990, then declining	1.180	1.200	As above	As above			Nil	242.8	321.2	132
	High	Rising ASFR until 1990, then constant	1.190	1.250	As above	As above			Nil	242.8	325.1	134
	Constant fertility	Constant ASFR	1.180	1.180	As above	As above			Nil	242.8	318.3	131
Yugoslavia	Low	Declining ASFR	1.140	0.960	Declining mortality	Males Females	65.4 69.7	68.5 72.0	Nil	20.4	24.8	122
	Medium*	Declining ASFR until 1980, and rising in young age groups afterwards	1.140	1.110	As above	Males Females	as above	68.5 70.3	Nil Nil	20.4	25.7	126
	High 1	Rising ASFR in age groups 15-39	1.150	1.180	As above	Males Females	as above	68.5 72.0	Nil	20.4	26.2	128
	High 2	Rising ASFR in all age groups	1.160	1.270	As above	Males Females	as above	68.3 71.8	Nil	20.4	26.8	131

Sources: Belgium: Institut National de Statistique, *Statistiques démographiques 1971*, No. 3, Royaume de Belgique, Ministère des Affaires Economiques; Bulgaria: I. Stefanov, Z. Sugarev, N. Naumov, E. Christov, At. Atanasov, *Demografija na Bulgarija*, Sofia, Nauka i Izkustvo, 1974; K. Doukov, *Le vieillissement de la population de Bulgarie et ses conséquences économiques et sociales*, Institut de Statistique, Sofia 1974; France: Q. C. Dinh, M. Passage, S. Hemery, R. Salais, *Projections démographiques pour la France, avec migrations extérieures (point de départ: 1er janvier 1970)*, Paris, Institut national de la statistique et des études économiques, No. 89, Collections de l'INSEE, Series D-21, April 1973 (Summary, Demographic projections for France, including foreign migrations (starting January 1970)), Paris, April 1973; Greece: V. G. Valaoras, *Urban-rural dynamics of the population of Greece, 1950-1995* (preliminary report), National Statistical Service of Greece and Centre for Planning and Economic Research, Athens, 31 July 1974; Netherlands: Centraal Bureau voor de Statistiek, *Berkeningen omtrent de toekomstige bevolkingsgroei in Nederland in de periode 1970-2000*, 1971; Portugal: Instituto Nacional de Estatistica, *Projecções da População Residente no Continente e Ilhas Adjacentes (1975-76-81)*, Estudos 45, May 1972; Yugoslavia: *Demographic Projections 1970-2000 for FSR Yugoslavia*, Federal Statistical Institute, Belgrade, March 1973

Direct communications from central statistical offices (obtained in 1972-1974): Austria, Czechoslovakia, Denmark, Finland, Germany (Federal Republic of), Hungary, Ireland, Netherlands, Norway, Poland, Romania, Spain, Sweden, Switzerland, United Kingdom.

Projections by the Population Division of the United Nations Secretariat (prepared in 1974) for: Albania, German Democratic Republic, Italy, USSR.

NOTE. * denotes variant included in main tabulations of the present chapter.

[a] 1969.

[b] 1985.

[c] 1976-1980.

[d] 1.1.1981.

in longevity being reversed and postulated as a virtual certainty the likelihood of a marked slowing down in mortality improvements at both ends of the life schedule; amongst infants because the rates are already so low in many countries and amongst the elderly because there is so far little evidence of a breakthrough in the control of degenerative diseases. For the projections, however, most countries have assumed some improvements in mortality, particularly in infant mortality where rates are still above about 25 infant deaths per 1,000 live births and amongst the aged where the expectation of life at birth (e^0_0) is still below an average for both sexes of about 70 years. Only the Netherlands, already a front runner in this regard, suggests a slight worsening of mortality schedules at higher ages for males.

On the whole, the mortality patterns and expectations of life provided for in the assumptions seem realistic and attainable when considered against the evidence of immediate past trends as analysed in chapter III.[5] The maximum female expectation of life at birth proposed by the end of the projection period is 78.9 years in Switzerland, with Sweden and the United Kingdom also at or above 78 years; and the minimum assumed is 70.3 years in Yugoslavia. The corresponding figures for males are a maximum of 73.2 years for France, with Switzerland next at 73.0 years; and a minimum of 64.4 years in Portugal. Over the projection period considerable gains are postulated for both sexes in Albania, the German Democratic Republic, Italy, Poland, Romania and the USSR.

Taking Europe as a whole, the improvements in mortality implied in the assumptions of tables VII.1 (and VII.3) propose extensions of average expectations of life at birth but do not significantly change the relativities of each sex. At the beginning of the period (1970-1975) the maximum assumed expectation was higher than the minimum by 11.8 per cent in the case of males and 10.6 per cent in the case of females. At the end of the period (1995-2000) the corresponding figures were still 11.6 per cent and 10.0 per cent for females. The range of improvements implied in these expectations over the projection period will not significantly change growth patterns in any of the countries: any variations in fertility will be much more significant in this regard. However, further reductions in mortality would add to the ageing process which has already become so apparent in many European populations, and the maintenance of sex differences in mortality as assumed in the projections would continue to ensure a marked surplus of women over men in the 60 and over age groups, and especially in those above age 74.

With regard to fertility, the range of assumptions used is quite wide, as presented in table VII.1, both between variants and also between countries. Inter-country comparisons in terms of GRRs at the beginning of the projection period go all the way from 2.310 in Albania to 0.800 in Finland. These imply a total fertility per woman of respectively close to five children (4.76) and less than two (1.65). The Albanian fertility assumption is, however, less typical of the European situation than is that of Finland, for all of the GRRs assumed in table VII.1 for 1970-1975 imply a total fertility of less than three children;[6] four of them imply a total fertility of less than two children; and a further three imply a size so marginally above two children that their net reproduction rates would be below replacement level.[7] In other words, amongst the minimum fertility assumptions for 1970-1975, seven of the twenty-five countries imply a total fertility rate which is already below replacement level,[8] while at least six other countries imply rates that are at or only marginally above replacement level.[9] Thus, half the countries begin their projection with assumptions implying fertility levels about or below replacement.

In most cases the maximum and minimum assumptions within each country for 1970-1975 are fairly close together, but a striking exception is Czechoslovakia with a range of GRR from 0.984 to 1.454. Again also, Albania with a maximum GRR of 2.430 provides a figure far outside the range of any other country.

Of the 22 countries for which GRRs were directly provided or could be estimated from the data submitted, the minimum assumption for the final five-year period, 1995-2000, was below the minimum for 1970-1975 for 17 countries; in four other cases no change was implied; and the only increase assumed was for Denmark, from a figure marginally below 1.000 to one marginally above this level. The sharpest downward movement assumed was for Albania, from a GRR of 2.310 to one of 1.140.

In terms of maximum assumptions, comparing 1970-1975 with 1995-2000, seven countries implied a decrease in fertility, nine an increase, and six no change. Comparing the maximum assumption for 1995-2000 with the minimum for 1970-1975, thirteen countries assumed an increase in GRR, seven a decrease and two no change. In almost all cases where the maximum assumption in 1995-2000 moved upwards when compared with the minimum in 1970-1975, the shift was comparatively slight, with Czechoslovakia (1.454 and 0.984), Romania (1.410 and 1.270) and the United Kingdom (1.370 and 1.170) showing the greatest variations.

Taking a GRR of 1.050 as approximately the equivalent of replacement level fertility, 15 of the minimum assumptions for the years 1995-2000 were clearly below this level, and only Spain offered a GRR above 1.200.[10]

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[5] They are also within the framework of cautious optimism relating to future possibilities suggested by WHO, *World Health Statistics Report* (Geneva), vol. 27, No. 10 (1974).

[6] No GRR was submitted by Ireland; but with a total fertility rate of 3.84 in 1970 (GRR = 1.86), Ireland is almost certainly the one case in addition to Albania with a total fertility still above 3 children in 1975.

[7] This total fertility rate is often written as "completed family size". This is not strictly correct as total fertility is measured against all women, not just married women. But with such high proportions now married (and with the proportion of single mothers increasing) the difference between "completed fertility per woman" and "completed family size per married woman" is now quite slight, on average about 0.15 of a child.

[8] Czechoslovakia, Denmark, Finland, Germany (Federal Republic of), Hungary, Sweden and Switzerland.

[9] Austria, Belgium, German Democratic Republic, Italy, Netherlands and Poland.

[10] Excluding the atypical case of Albania, the difference between gross and net reproduction rates of the countries covered in this study range currently from approximately 0.02 to 0.10. The difference will tend to be narrowed as mortality levels are reduced.

Even the maximum assumptions for 1995-2000 left seven countries with GRRs below replacement level; but positive growth would still occur in most countries until the end of the century, even on the basis of their minimum fertility assumptions.

The role of migration in the future is more difficult to assess and, as already pointed out, was not uniformly handled in the country returns listed in table VII.1. In general, where migration was incorporated in some or all or the variants it tended to be an extrapolation of recent trends, or to be based on labour requirements as assessed in socio-economic development plans.

All projection variants of eastern Europe and the USSR exclude migration. Two northern countries (Sweden and Denmark) provided an assumption with a modest net annual gain, whereas Finland postulated a small loss in 5 out of 6 variants. Another northern country, Ireland, traditionally a zone of extensive emigration, as described in chapter VI, provided only one variant and this assumed no net loss through migration from 1971 to 1976, and only a modest outflow of 5,000 a year thereafter. The United Kingdom, which has also been an area of outflows and inflows, with generally a net loss over-all from migration, excluded migration from two variants but allowed a net loss of 50,000 a year in its medium variant.

In western Europe, Belgium, France and Switzerland, all countries of substantial net emigration in the recent past, provided an assumption including some, but decreasing, net gains from this source: Belgium, 10,000 a year until 1974 and nil gains thereafter; France, 135,000 a year until 1985; and Switzerland a net gain of about 4,500 "naturalized immigrants" a year plus a constant level of 730,000 migrant workers. The Federal Republic of Germany, formerly a major net immigration country, did not include migration in any of its projection variants.

The most extensive area of net emigration has been southern Europe, although outflows have been diminishing markedly in recent years, with the probable exception of Yugoslavia.[11] These trends are reflected in the projection assumptions of Greece and Italy. The Greek assumption is for an initial loss of 0.51 per cent of population a year to 1975, which is much above recent trends, and no net emigration thereafter. Italy also included net emigration in all its projection variants, but at reducing levels, from 50,000 in 1970-1975 to 25,000 in 1995-2000. Spain provided a variant which assumes net losses of between 20,000 and 30,000 a year, which are considerably below recent levels of net emigration. Yugoslavia did not include migration in any variant.

The exclusion of a migration variant in some countries should not be read as a nil expectation of gains or losses from this source; but its exclusion by so many countries and the trend downwards amongst those which did provide a migration variant may suggest considerable caution both by the traditional migrant-receiving countries in the light of recent economic downturns, and by the traditional migrant-sendlng countries in the light of their recent, and generally anticipated, further decline in fertility and growth rates. Certainly the patterns as given in table VII.1 allocate a very minor role to migration with regard to both trends in future growth and changing population structures.

What do the combinations of these patterns suggest in terms of over-all growth between 1970 and the year 2000? The minimum assumptions give a population for Europe, excluding the USSR, of 515 million by the year 2000, an increase of 57 million or 12 per cent over the 1970 total of 458 millions. The maximum assumptions yield a considerably higher figure of 549 million, an increase of 91 million or 20 per cent over the projection period. Compared with earlier growth as discussed in chapter II, the projected patterns may be summarized as follows:

	Actual			*Projected to 2000*	
	1910	*1940*	*1970*	*Minimum*	*Maximum*
Population in millions . .	307	379	458	515	549
Increase each 30 years . .	—	72	79	57	91
Percentage increase each 30 years	—	23	20	12	20

Thus the addition of the populations yielded by the minimum assumptions for each country implies for Europe as a whole a marked slowing down of growth compared with both 1940-1970 and 1910-1940; but the maximum assumptions would restore the percentage growth to the 1940-1970 level. In interpreting these figures it must be remembered that the projections make no allowance for the kinds of international disasters that Europe suffered in each of the earlier periods.

For the USSR, both minimum and maximum fertility assumptions used in the projections were somewhat higher than those for most countries of Europe and consequently yielded a higher rate in 1970-2000 than the actual experience in 1940-1970, while the maximum assumptions yielded a higher rate than in 1910-1940 as well. Summarizing, as above for Europe, the projected growth pattern compared with the past was as follows for the USSR:

	Actual			*Projected to 2000*	
	1910	*1940*	*1970*	*Minimum*	*Maximum*
Population in millions . .	150	195	243	311	325
Increase each 30 years . .	—	45	48	68	82
Percentage increase each 30 years	—	30	25	28	34

Chapter II also draws attention to the growing similarities, as the twentieth century advanced, in the vital indices of the major regions of Europe; in eastern, northern, western and southern Europe the estimated average gross reproduction rate for 1965-1970 varied only between 1.2 and 1.3, and the expectation at birth for combined sexes varied by only two years, between 70 and 72. By and large, the projections do not break these similarities, particularly with regard to expectations of life. The projections do suggest, however, that the slowest growth will again be in western and northern Europe and the most rapid growth in southern Europe and the USSR. Compared with earlier periods, a marked slowing down is assumed in the projections of eastern Europe.

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[11] See chapter VI.

The minimum and maximum growth patterns by countries and by major regions are summarized in table VII.2. With regard to both limits, the slowest growing region is western Europe, in which the highest minimum growth rate is found in the Netherlands (19 per cent) and the highest maximum growth rate in France (26 per cent). The country of this region with the slowest positive growth is Austria, with an implied minimum increase of only 1 per cent and a maximum of only 5 per cent over the 30 year-period;[12] but one country, the Federal Republic of Germany, shows population decline in both its variants.

Northern Europe is the second slowest growing region, with rates varying from an almost stationary situation in Finland (with natural decrease setting in after about 1985) and very slow growth in Sweden (5 per cent) to the very high growth of 43 per cent implied in the projection of Ireland. For the region as a whole, the minimum growth 1970-2000 is only 10 per cent, but the range implied between minimum and maximum assumptions is considerably greater than is the case in western Europe. This is primarily because of the dominance in northern Europe of the United Kingdom both in numerical terms and in terms of its relatively high maximum variant which assumes a remarkably high GRR of 1.37 in 1995-2000, compared with an actual figure of only approximately 1.10 in 1972.

TABLE VII.2

Population of Europe 1970 and projected to 2000 (in millions) according to the minimum and maximum assumptions of table VII.1 [a]

Region and country	*Population in 1970*	*Projected 2000*		*Growth in millions*		*Index of growth (1970 = 100)*		*Difference between minimum and maximum*	
		Minimum	*Maximum*	*Minimum*	*Maximum*	*Minimum*	*Maximum*	*Numbers*	*Percentage change*
Eastern Europe	103.0	116.8	127.2	13.8	24.2	113	123	10.4	8.9
Bulgaria	8.5	9.6	10.1	1.1	1.6	113	119	0.5	5.2
Czechoslovakia	14.4	15.6	19.2	1.2	4.8	108	133	3.6	23.1
German Democratic Republic	17.1	18.1	18.7	1.0	1.6	106	109	0.6	3.3
Hungary	10.3	10.5	10.9	0.2	0.6	102	106	0.4	3.8
Poland	32.5	37.4	40.5	4.9	8.0	115	125	3.1	8.3
Romania	20.2	25.6	27.8	5.4	7.6	127	138	2.2	8.6
Northern Europe	80.1	87.8	96.2	7.7	16.1	110	120	8.4	9.6
Denmark	4.9	5.5	5.5	0.6	0.6	112	112	0.0	0.0
Finland	4.6	4.6	4.6	0.0	0.0	100	100	0.0	0.0
Ireland	3.0	4.3	4.3	1.3	1.3	143	143	0.0	0.0
Norway	3.9	4.3	4.8	0.4	0.9	110	123	0.5	11.6
Sweden	8.0	8.4	8.4	0.4	0.4	105	105	0.0	0.0
United Kingdom	55.7	60.7	68.6	5.0	12.9	109	123	7.9	13.0
Western Europe	146.8	154.9	162.4	8.1	15.6	106	111	7.5	4.8
Austria	7.4	7.5	7.8	0.1	0.4	101	105	0.3	4.0
Belgium	9.7	10.0	10.4	0.3	0.7	103	107	0.4	4.0
France	50.5	59.6	63.6	9.1	13.1	118	126	4.0	6.7
Germany, Federal Republic of	61.0	56.8	58.7	–4.2	–2.3	93	96	1.9	3.4
Netherlands	13.0	15.4	16.1	2.4	3.1	119	123	0.7	4.6
Switzerland	5.2	5.6	5.8	0.4	0.6	108	112	0.2	3.6
Southern Europe	127.9	155.3	163.4	27.4	35.5	121	128	8.1	5.2
Albania	2.2	4.0	5.2	1.8	3.0	182	236	1.2	30.0
Greece	8.8	10.0	10.0	1.2	1.2	114	114	0.0	0.0
Italy	53.6	59.8	63.3	6.2	9.7	111	118	3.5	5.9
Portugal	8.9	11.3	11.3	2.4	2.4	127	127	0.0	0.0
Spain	34.0	45.4	46.8	11.4	12.8	134	138	1.4	3.1
Yugoslavia	20.4	24.8	26.8	4.4	6.4	122	131	2.0	8.1
TOTAL EUROPE[b]	457.8	514.8	549.2	57.0	91.4	112	120	34.4	6.7
USSR	242.8	311.2	325.1	68.4	82.3	128	134	13.9	4.5
TOTAL EUROPE[b] and USSR . .	700.6	826.0	874.3	125.4	173.7	118	125	48.3	5.9

[a] Excluding international migration, except for Greece, Italy, Ireland and Switzerland (see table VII.1).

[b] Excluding the USSR.

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[12] Austria seems likely to have periods of natural decrease between 1975 and 1985 but the age structure will still be such that slow growth would be resumed thereafter.

The assumptions of east European countries yield a maximum implied growth for this region of 23 per cent and a minimum of 13 per cent, both figures being 3 per cent above the rates for northern Europe. There are, however, two countries for which very slow rates of increase were assumed: the German Democratic Republic, with a minimum growth for 1970-2000 of 6 per cent and a maximum of 9 per cent; and Hungary with corresponding figures of only 2 and 6 per cent. Romania (where birth rates have been high in recent years following the introduction of legislation to control abortion) assumes the highest minimum growth of 27 per cent, and also the highest maximum of 38 per cent. But the widest range of variance is in Czechoslovakia, whose minimum and maximum yield population increases of 8 and 33 per cent respectively. The latter figure would require an immediate rise of the GRR to 1.454, compared with an actual figure in 1972 of approximately 1.080. However, as eastern Europe contains a number of countries which have experienced relatively high fertility in the fairly recent past, they have a strong inbuilt growth momentum in their age structures. This effect is apparent in the case of Poland, with an implied growth from a minimum of 11.5 per cent to a maximum of 12.5 per cent following from minimum and maximum gross reproduction rates in 1995-2000 of only 0.813 and 1.056, i.e., well below to scarcely above replacement level.

The assumptions of the countries of southern Europe give this region the highest growth rates between 1970 and 2000, although in all cases their minimum assumptions for 1995-2000 are below recent levels. Only in the cases of Italy and Yugoslavia, however, are the rates assumed to fall below replacement level. The maximum assumptions of these countries are in all cases above replacement level. Percentage growth ranges from a minimum of 11 (Italy) to a maximum of 136 (Albania), with the next highest at 38 per cent (Spain). For the region as a whole, the assumptions give a minimum growth of 21 per cent, and a maximum of 28 per cent. This region contains countries in which fertility has declined steeply only in recent times and the rates are still considerably above those in the countries of other regions. This applies particularly to Albania and, to a less marked extent, to Spain and Portugal, whose GRRs in 1972 were respectively about 2.300, 1.380 and 1.310.

The figures for the USSR imply a higher percentage growth than in any of the four regions of Europe, but the assumptions applied here by the Population Division of the United Nations Secretariat imply relatively little change in fertility through the whole projection period, with a minimum GRR in 1995-2000 of 1.100 and a maximum of 1.270, compared with an estimated figure of approximately 1.198 in 1972. Judged from estimates of recent trends, however, a steeper decline in reproduction rates, at least during the earlier years of the projection period, would seem distinctly possible and such a change would tend to reduce the growth patterns suggested in table VII.2.

Whatever the precise course that may be followed by the countries of Europe until the end of the century, it seems most likely that, as in the past, there will be higher growth in southern and eastern Europe than in northern and western Europe, although the difference will be narrowing. The transition to low fertility patterns generally came earlier in the northern and western regions and the slowing-down process has gone further there; they have a weaker impetus to growth and have population sex-age structures nearer the stable model than do eastern and southern Europe. It is also to be noted that eastern Europe provides the only recent examples of upturns in fertility, in Czechoslovakia, Hungary and Poland (see chapter V). The region also includes countries which have currently taken measures to encourage higher rates of population growth.[13] How far such policies have determined in the past or may in the future determine long-term fertility patterns is still rather a matter of conjecture than of proof but, as the recent experience of Romania shows, they may shift growth rates considerably in the short term and so defer the slowing-down process that follows long-term fertility declines.

Over-all, however, assuming that the most likely variant will fall between the maximum and the minimum assumptions summarized above, the European pattern will be one of decelerating population growth, particularly in the western and northern regions. Given the assumptions, decline will have started in a few cases before the century is out, with others to follow as they move into the twenty-first century. Nevertheless, the addition of some 60 million people in Europe and some 70 million in the USSR by the year 2000 seems well within reasonable possibilities.

C. Application of the most likely variant

1. *Mortality patterns*

As a rule only one mortality variant was supplied [14] or otherwise calculated, in terms of expectation of life at birth by sex, so that little further exposition of table VII.3 need be given.[15] As already indicated, the assumptions seem on the whole to set modest targets that can be met by holding infant mortality below 20 per 1,000 live births and by sustaining and slightly improving the application of modern medical and scientific knowledge in the fields of infectious and degenerative diseases. But, as has already been emphasized, the pace of improvement is likely to be slower than it was in the past, and this seems to be implicitly recognized in the schedules of life expectations presented in table VII.3. The main points to be stressed with relevance to the subsequent material

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[13] For a review of recent population policies in eastern Europe and the USSR, see J. Berent, "Causes of fertility decline in eastern Europe and the Soviet Union", *Population Studies* (London), vol. 24, No. 1 (March 1970), pp. 35-58, and vol. 24, No. 2 (July 1970), pp. 247-292. Also M. Macura, "Population policies in socialist countries of Europe", *Population Studies* (London), vol. 28, No. 3 (November 1974), pp. 369-372. For a general review of policies, see B. Berelson, ed., *Population Policies in Developed Countries* (New York, McGraw Hill, 1974).

[14] Yugoslavia, however, provided three variants for female mortality to the year 2000, covering a small range of life expectations (from 70.3 to 72.0). The lowest mortality assumption was taken as the most likely.

[15] The main features of the national variants have already been set out in the section B of this chapter.

TABLE VII.3

Average expectation of life at birth of men and women, by country, 1970-1975 to 1995-2000: "most likely" variant

	Men						*Women*					
Region and country	*1970-1975*	*1975-1980*	*1980-1985*	*1985-1990*	*1990-1995*	*1995-2000*	*1970-1975*	*1975-1980*	*1980-1985*	*1985-1990*	*1990-1995*	*1995-2000*
Eastern Europe												
Bulgaria	68.8[a]	. .	. .	. .	. .	71.6	72.7[a]	. .	. .	. .	. .	75.7
Czechoslovakia	66.9	66.9	67.8	67.8	68.7	68.7	73.3	73.3	74.0	74.0	74.7	74.7
German Democratic Republic	70.0	70.7	71.2	71.6	71.8	72.0	75.3	76.0	76.5	76.9	77.3	77.5
Hungary	66.0[b]	66.0	66.0	66.0	66.0	66.0	72.1[b]	72.1	72.1	72.1	72.1	72.1
Poland	67.2	67.9	68.5	69.4	70.6	71.8	73.2	73.6	74.1	74.8	75.6	76.4
Romania	65.1	. .	. .	. .	. .	71.2	69.5	. .	. .	. .	. .	75.0
Northern Europe												
Denmark	70.5[c]	70.7	70.9	71.1	71.2	71.4	75.2[c]	75.4	75.6	75.7	75.8	75.9
Finland	66.5	66.5	66.7	66.8	66.8	66.8	74.2	74.3	74.4	74.5	74.5	74.5
Ireland	69.3	. .	. .	. .	71.9	71.9	74.1	. .	. .	. .	76.5	76.5
Norway[d]	71.0	. .	. .	. .	. .	. .	76.0	. .	. .	. .	. .	. .
Sweden	72.0	. .	. .	. .	. .	72.3	76.9	. .	. .	. .	. .	78.2
United Kingdom	69.1	69.6	70.2	70.7	71.1	71.6	75.3	75.9	76.5	77.1	77.6	78.0
Western Europe												
Austria	66.6	66.6	66.6	66.6	66.6	66.6	73.7	73.7	73.7	73.7	73.7	73.7
Belgium[e]	67.7	. .	. .	. .	. .	. .	73.5	. .	. .	. .	. .	. .
France[f]	68.9[g]	70.9	71.5	. .	. .	73.2	75.2[g]	76.9	77.2	. .	. .	77.9
Germany, Federal Republic of	67.4	67.4	67.4	67.4	67.4	67.4	73.5	73.5	73.5	73.5	73.5	73.5
Netherlands	70.6	70.2	69.5	69.5	69.5	69.5	76.3	76.5	76.6	76.6	76.6	76.6
Switzerland	69.8	70.4	71.0	71.7	72.3	73.0	75.1	75.8	76.5	77.3	78.1	78.9
Southern Europe												
Albania	67.2	68.0	68.7	69.3	69.8	70.3	69.9	70.7	71.5	72.2	72.8	73.4
Italy	69.2	70.0	70.6	71.1	71.6	72.0	75.1	75.6	76.1	76.5	76.8	77.0
Greece	70.1	. .	72.3	. .	. .	. .	73.8	. .	75.9	. .	. .	. .
Portugal	64.4	65.6	65.6	65.6	65.6	65.6	70.5	72.0	72.0	72.0	72.0	72.0
Spain	69.6	69.6	69.6	69.6	69.6	69.6	74.7	74.7	74.7	74.7	74.7	74.7
Yugoslavia	65.4	66.4	67.2	67.6	68.1	68.5	69.7	70.5	71.1	71.4	71.7	72.1
USSR	66.5	67.1	67.7	68.3	68.9	69.5	74.3	74.7	75.2	75.6	76.0	76.5

[a] Data for 1965-1967.

[b] Data for 1970.

[c] Data for 1973-1974.

[d] Data for 1961-1965.

[e] Data for 1959-1963.

[f] Data for the last year of each quinquennial period.

[g] Data for 1970.

analyzed in this chapter are, first, that the extremely low mortality implied at infant ages and through to the ages at which women cease childbearing[16] means that the difference between gross and net reproduction rates is now quite slight through all Europe; and, secondly, that the ageing process with its rising proportion of women to men will continue. No region of the world with a population total comparable with that of Europe has, or has ever had, such low mortality schedules, and it is a perfectly safe assumption that the social policies of all European countries will continue to attempt to sustain and to improve those schedules along the lines indicated in table VII.3.

2. *Fertility trends and patterns*

Table VII.4 provides GRRs relevant to the most likely projection variant. In most of the national projections the basic assumptions concerning future trends in fertility were made with reference to GRRs (and for ASFRs). All projections prepared by the Population Division and used here for Albania, the German Democratic Republic, Italy and the USSR, also applied GRRs. However, these rates were not available for the projections of Bulgaria, France, Ireland, Norway and the Netherlands. For these five countries the latest available published figures or other estimates of GRRs have been used as approximations for the initial period 1970-1975.

Clearly these most likely fertility assumptions narrow the range of differences discussed earlier with regard to table VII.1. The trend is also increasingly towards replacement level fertility, with fertility in some cases

TABLE VII.4

GRRs by country, "most likely" variant

Region and country	*1970-1975*	*1975-1980*	*1980-1985*	*1985-1990*	*1990-1995*	*1995-2000*
Eastern Europe						
Bulgaria	0.978[a]	General fertility rate to remain constant				
Czechoslovakia	1.149	1.149	1.149	1.149	1.149	1.149
German Democratic Republic	1.024	1.012	1.002	0.998	1.000	1.007
Hungary	0.947	0.989	0.985	1.006	1.006	1.006
Poland	1.024	0.939	0.896	0.894	0.900	0.905
Romania	1.270	1.200	1.200	1.200	1.200	1.200
Northern Europe						
Denmark	0.975[b]	0.972	1.006	1.047	1.063	1.072
Finland	0.820	0.750	0.740	0.730	0.730	0.730
Ireland	1.850[a]	Declining marital fertility rates				
Norway	1.209[a]	Constant at 1972 ASFRs				
Sweden	0.970	0.970	0.970	0.970	0.970	0.970
United Kingdom	1.160	1.160	1.140	1.140	1.130	1.130
Western Europe						
Austria	1.042	0.916	0.908	0.908	0.908	0.908
Belgium	1.015[a]	0.930[c]	0.930	0.930	0.930	0.930
France	1.170[a]	Declining to 2.0 children per couple		1.040	1.040	1.040
Germany, Federal Republic of	0.887	0.838	0.838	0.838	0.838	0.838
Netherlands	1.051[d]	1.044[d]	1.037[d]	Constant thereafter		
Switzerland	0.920	0.900	0.880	0.840	0.840	0.820
Southern Europe						
Albania	2.370	2.200	1.980	1.730	1.470	1.280
Greece	1.145	1.185	1.116	1.116	1.109	1.109
Italy	1.108	1.072	1.050	1.040	1.034	1.032
Portugal	1.260	1.180	1.180	1.180	1.180	1.180
Spain	1.404	1.382	1.368	1.353	1.330	1.310
Yugoslavia	1.140	1.110	1.110	1.110	1.110	1.110
USSR	1.180	1.190	1.210	1.220	1.210	1.200

[a] Annual rates for 1972, and in the case of Ireland, 1970. See United Nations, *Population and vital statistics report*, Statistical Papers, series A, vol. 26, No. 2.

[b] Data for 1973-1974.

[c] The most likely assumption for Belgium as stated in table VII.1 implies a reduction to the constant level of GRR = 0.930 by 1974.

[d] Estimated for 1970-1975 and 1980-1985 from completed children per couple given in the Netherlands most likely variant (table VII.1). The estimate for 1975-1980 assumes a linear decline.

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[16] As fertility declines, the ages above 34 years become increasingly insignificant, the age at which childbearing ceases tends to be below the physiological maximum, or the end of fecund years. This reduces even further the significance of mortality in net reproduction. Table VII.6 illustrates this trend.

already below that level, and most assumptions imply a persistence of such situations. Again, taking 1.050 as the approximate measure of replacement, 11 of the rates fall below this level in 1970-1975 and thereafter 12 continue below this level for the remainder of the projection period. In general, the levels are far below the maximum variants and tend to be close to the minimum variants of table VII.1. While Hungary and Denmark, both below replacement level in 1970-1975, show a slight increase in later periods to bring them closer to replacement level, the majority of countries currently below replacement level (Bulgaria, German Democratic Republic, Poland, Finland, Sweden, Austria, Belgium, Federal Republic of Germany, Switzerland) remain that way. Of the countries which currently have a relatively high fertility, three (France, Netherlands and Italy) assume that fertility will fall to or slightly below replacement level before the end of the century.

The significance of these assumptions in terms of total fertility per woman at the beginning and end of the projection period, and a comparison between these and the latest available rates, are given in table VII.5. While the rates shown in the table are not to be read as exact completed family size, they are a close approximation to this concept.[17] Two points stand out. First, there is a very close correspondence between actual total fertility around 1972 and the most likely variants for 1970-1975, but in most countries of eastern Europe (Poland excepted) the assumed variant is above the actual situation. Secondly, all the total fertility levels with the exception of that of Albania for 1970-1975 and, to some degree, that of Ireland, imply that Europe and the USSR consist of countries in which family planning has attained a high level of efficiency. The most likely variants of the exceptional cases of Albania and Ireland assume that these countries too will increase their efficiency in this regard. The very low total fertilities assumed by 1995-2000 for Poland, Finland, Austria, Belgium, the Federal Republic of Germany and Switzerland will mean, if they are sustained, the onset of population decline either before (Austria, Finland, Federal Republic of Germany) or early in the twenty-first century. For most of the remaining countries growth rates will also be slowing down markedly on the basis of their most likely variant, with a consequent reduction in the regional differences. Whereas the ratio of the lowest total fertility (German Democratic Republic) to the highest (Albania) in 1972 was in excess of 1:2.50, the ratio assumed for 1995-2000 is reduced to 1:1.80, with both lowest (Finland, 1.50) and highest (Spain, 2.70) at very much reduced levels compared with the beginning of the projection period.

TABLE VII.5

Actual and estimated future total fertility per woman according to "most likely" variant, 1970-1975 and 1995-2000

Region and country	*Actual around 1972*	*Estimated*[a] *1970-1975*	*Estimated*[a] *1995-2000*
Eastern Europe			
Bulgaria	2.04	2.04	2.04
Czechoslovakia	2.23	2.37	2.37
German Democratic Republic	1.79	2.11	2.07
Hungary	1.93	1.95	2.07
Poland	2.24	2.11	1.86
Romania	2.55	2.62	2.47
Northern Europe			
Denmark	2.04	2.00	2.18
Finland	1.83	1.69	1.50
Ireland	3.84	3.84	..
Norway	2.49	2.49	2.49
Sweden	1.93	2.00	2.00
United Kingdom	2.27	2.39	2.33
Western Europe			
Austria	2.14	2.15	1.87
Belgium	2.09	2.09	1.92
France	2.42	2.41	2.14
Germany, Federal Republic of	1.92	1.83	1.73
Netherlands	2.17	2.16	2.14
Switzerland	2.02	1.90	1.69
Southern Europe			
Albania	..	4.88	2.64
Greece	2.21	2.36	2.28
Italy	2.37	2.28	2.13
Portugal	2.70	2.60	2.43
Spain	2.84	2.89	2.70
Yugoslavia	2.35	2.35	2.29
USSR	2.47	2.43	2.47

[a] Estimates by ECE secretariat.

A feature of the transition from high to low age-specific fertility has been the rapid decline of the rates applying to the higher age groups. In addition, in many European countries in which higher proportions were marrying at younger ages during the recent past (particularly in northern and western Europe), the whole fertility cycle was being shifted towards younger ages. These processes are described in chapter V, and the assumptions concerning the most likely variants for the future are set out in table VII.6.

Almost all the countries of eastern, northern and western Europe assume in their most likely variant that this young fertility pattern will remain. By implication, this also assumes that the low average ages of marriage and the high proportion marrying which have been typical of the recent past, will continue to apply. The one exception here is Ireland, where late marriage still prevails and where the age-specific fertility rate of 46.8 at age 40-44 in 1970 is exceeded only by Albania. In its assumption about the future, however, Ireland anticipates a much faster rate of fertility decline at older than at younger ages. Its assumption is for a decline in fertility of 1 per cent for marriages up to 5 years, duration and of 2 per cent for higher durations.

Only southern Europe assumes relatively high levels of ASFRs at ages of 30 years and above. This is particu-

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[17] See chapter VII, foot-note 1.

TABLE VII.6

ASFRs, by country, 1970-1975 [a] and 1995-2000 according to "most likely" variant

(Births per 1,000 women in the given age group)

Region, country and period	Ages of women							All ages	Percentage proportion of total fertility by given age	
	15-19	20-24	25-29	30-34	35-39	40-44	45-49		30	35
Eastern Europe										
Bulgaria										
1972	69.3	181.1	101.8	39.3	12.4	3.0	0.3	407.2	86.5	96.1
Czechoslovakia										
1970-1975	45.0	181.5	113.7	51.5	18.1	4.5	0.3	414.6	82.1	94.5
1995-2000	45.0	181.5	113.7	51.5	18.1	4.5	0.3	414.6	82.1	94.5
German Democratic Republic										
1970-1975	75.6	167.2	103.5	51.5	21.5	3.0	0.0	422.3	82.0	94.2
1995-2000	74.3	164.5	101.7	50.7	21.2	2.9	0.0	415.3	82.0	94.2
Hungary										
1970-1975	53.2	165.2	110.8	50.4	17.4	4.0	0.3	401.3	82.0	94.6
1995-2000	54.0	174.0	118.0	52.0	18.0	4.0	0.3	420.3	82.3	94.7
Poland										
1970-1975	29.0	161.0	123.0	66.0	33.0	10.0	0.8	422.8	74.0	89.6
1995-2000	27.0	135.0	118.0	58.0	30.0	6.0	0.3	374.3	74.8	90.3
Romania										
1970-1975	59.1	184.3	138.4	85.6	43.2	12.4	0.9	523.9	72.9	89.2
1995-2000	56.4	172.8	130.2	81.2	41.6	11.9	0.9	495.0	72.6	89.0
Northern Europe										
Denmark										
1970-1975[b]	28.4	136.1	139.9	67.7	23.7	4.3	0.3	400.4	76.5	92.9
1995-2000	29.0	138.9	161.5	78.2	27.4	5.0	0.3	435.8	74.9	93.5
Finland										
1970-1975	30.0	110.0	100.0	53.0	22.0	6.0	0.2	321.2	74.7	91.2
1995-2000	29.0	103.0	95.0	50.0	19.0	5.0	0.2	301.2	75.4	92.0
Ireland										
1970	–	142.5	238.8	201.8	132.8	46.8	3.3	766.0	49.8	76.1
Norway										
1972	47.1	180.7	148.7	78.5	34.5	8.7	0.5	498.7	75.5	91.2
Sweden[c]										
1970-1975	43.0	130.0	132.0	68.0	26.0	16.0	3.0	418.0	73.0	89.2
1995-2000	43.0	130.0	132.0	68.0	26.0	16.0	3.0	418.0	73.0	89.2
United Kingdom										
1970-1975	50.0	154.0	150.0	79.0	34.0	9.0	0.0	476.0	74.4	91.0
1995-2000	50.0	152.0	150.0	74.0	31.0	7.0	0.0	464.0	75.9	91.8
Western Europe										
Austria										
1970-1975	55.3	142.6	106.4	67.3	37.1	10.9	0.7	420.3	72.4	88.4
1995-2000	51.5	125.9	93.5	57.9	33.0	10.2	0.7	372.7	72.7	88.2
Belgium										
1972	29.1	139.4	133.1	73.1	34.4	8.9	0.7	418.7	72.0	89.5
France										
1972	36.7	160.7	146.6	86.5	40.4	11.4	0.9	483.2	71.2	89.1
Germany, Federal Republic of										
1970-1975	36.3	114.5	102.3	59.6	27.6	7.0	0.4	347.7	72.8	89.9
1995-2000	34.6	112.2	99.0	55.9	26.3	6.6	0.4	335.0	73.4	90.1
Netherlands										
1972	19.9	124.7	163.0	82.8	33.5	9.2	0.5	433.6	70.9	90.0

TABLE VII.6 (*continued*)

ASFRs, by country, 1970-1975 [a] and 1995-2000 according to "most likely" variant

(*Births per 1,000 women in the given age group*)

Region, country and period	*Ages of women*							*All ages*	*Percentage proportion of total fertility by given age*	
	15-19	*20-24*	*25-29*	*30-34*	*35-39*	*40-44*	*45-49*		*30*	*35*
Switzerland										
1970-1975	18.2	109.9	128.3	77.1	33.4	9.1	0.8	376.8	68.0	88.5
1995-2000	29.8	110.8	110.8	56.9	20.4	5.5	0.6	334.8	75.1	92.1
Southern Europe										
Albania										
1970-1975	45.9	243.1	285.1	190.4	135.7	57.6	18.6	976.4	58.8	78.3
1995-2000	37.4	139.2	166.1	102.8	58.5	20.6	2.6	527.2	65.0	84.5
Greece										
1970-1975	38.0	138.7	156.6	87.9	40.8	9.1	1.1	472.2	70.6	89.2
1995-2000	41.9	137.0	156.7	76.3	36.9	7.8	0.7	457.3	73.4	90.1
Italy										
1970-1975	24.6	122.0	141.6	97.9	51.9	15.9	1.4	455.3	63.3	84.8
1996-2000	22.9	113.7	131.9	91.2	48.4	14.8	1.3	424.2	63.3	84.8
Portugal										
1970-1975	29.1	128.1	144.8	107.4	73.9	31.2	3.0	517.5	58.4	79.1
1995-2000	29.0	120.8	135.4	98.7	70.6	26.3	3.2	484.0	58.9	79.3
Spain										
1970-1975	38.6	108.6	165.0	140.8	78.3	35.4	10.4	577.1	54.1	78.5
1995-2000	35.5	102.6	153.6	128.6	74.9	33.5	9.6	538.3	54.2	78.1
Yugoslavia										
1970-1975	54.1	166.7	129.4	73.2	35.7	11.0	1.7	471.8	74.2	89.7
1995-2000	60.0	170.5	126.7	66.8	26.7	6.8	0.8	458.3	77.9	92.5
USSR										
1970-1975	30.9	165.8	131.0	88.9	48.3	15.5	2.9	483.3	67.8	86.2
1995-2000	31.5	168.6	133.2	90.4	49.2	15.7	2.9	491.5	67.8	86.2

[a] For countries for which age-specific figures for 1970-1975 were not provided, annual rates of the latest available year are given.

[b] Data for 1974.

[c] Specific fertility rates not for the 5-year age group but for mid-point of single-year rates.

larly true of Spain and Portugal. While the rates shown for Albania are still high at these ages in 1995-2000, the most likely variant assumes nevertheless that they will have been drastically reduced compared with 1970-1975 levels; in the case of women aged 35-39 from 135.7 to 58.5, and for those aged 40-44 from 57.6 to 20.6.

A striking feature of the most likely assumptions is the continuation of wide differences in fertility levels at young ages. These will of course reflect inter-country variations in age at marriage. The assumed age-specific fertility rates at ages 15-19 continue to be high in eastern Europe except in the case of Poland. On the other hand, southern Europe, which tends to have the highest rates at older ages, has relatively low rates at young ages, Yugoslavia excepted. Even in the low fertility regions of northern and western Europe, however, the rates vary considerably, and high fertility at young ages is still assumed in some cases, even though total fertility is expected to be [illegible] en in the high age-specific rates assumed at ages 15-19 for Norway, Sweden and the United Kingdom. The assumed Swedish fertility pattern also implies relatively high rates among women aged 40-44, so that the relatively low total fertility of about 2 children is achieved by keeping rates low through the middle range of years, approximately ages 20 to 29.

Generally, however, with the exceptions of Albania, Ireland, Italy, Portugal and Spain, the over-all expected pattern is one in which about 70 per cent or a higher proportion of total female fertility will have been completed by age 30, and with the exceptions of Ireland, Portugal and Spain, between about 85 and 95 per cent of fertility will have been completed by age 35. The main childbearing period will remain ages 20-29. The combination of this fertility pattern with the low mortality which has also been assumed, means that the majority of Europe's women will have 25 to 30 years of active life ahead of them after the birth of their last child, which is a demographic datum of great social and economic significance.

Table VII.7

Birth rates, death rates and rates of natural increase, by country, 1970-1975 to 1995-2000, according to "most likely" variant

(Average annual rates per 1,000 population)

Region and country	Birth rates						Death rates						Natural increase					
	1970-1975	*1975-1980*	*1980-1985*	*1985-1990*	*1990-1995*	*1995-2000*	*1970-1975*	*1975-1980*	*1980-1985*	*1985-1990*	*1990-1995*	*1995-2000*	*1970-1975*	*1975-1980*	*1980-1985*	*1985-1990*	*1990-1995*	*1995-2000*
Eastern Europe																		
Bulgaria[a]	16.0	15.4	14.6	14.3	14.3	14.3	10.0	10.5	10.9	11.4	11.8	12.1	6.0	4.9	3.7	2.9	2.5	2.2
Czechoslovakia	16.6	16.4	15.3	14.6	14.6	14.8	12.2	12.5	12.1	12.2	11.7	11.7	4.2	3.9	3.2	2.4	2.9	3.1
German Democratic Republic	13.9	14.6	15.0	14.7	14.1	13.7	12.4	12.7	12.8	12.4	11.7	10.9	1.6	1.9	2.2	2.4	2.4	2.8
Hungary	15.0	16.0	14.6	13.5	13.6	14.2	12.0	12.6	12.9	13.2	13.4	13.6	3.0	3.4	1.7	0.3	0.2	0.6
Poland	16.9	16.8	15.6	14.1	13.2	12.9	8.5	9.1	9.5	9.6	9.6	9.6	8.4	7.7	6.1	4.5	3.6	3.3
Romania	19.3	18.4	17.6	17.4	17.8	17.5	10.2	10.2	10.2	10.2	10.1	10.0	9.1	8.2	7.4	7.2	7.7	7.5
Northern Europe																		
Denmark	14.8[b]	14.5	14.7	15.2	15.2	14.8	10.8[b]	11.1	11.5	11.8	11.9	11.9	4.0[b]	3.4	3.2	3.4	3.3	2.9
Finland	13.2	12.9	12.5	11.9	11.0	10.2	9.9	10.8	11.5	12.0	12.5	12.9	3.3	2.1	1.0	–0.1	–1.5	–2.7
Ireland	22.4	23.3	23.6	23.1	22.1	21.2	10.8	10.1	9.6	9.1	8.5	8.3	11.6	13.2	14.0	14.0	13.6	12.9
Norway	15.5	15.4	15.5	15.5	15.2	14.8	10.3	10.8	11.3	11.6	11.7	11.7	5.2	4.6	4.2	3.9	3.5	3.1
Sweden	14.3	13.7	13.1	13.0	13.1	13.0	10.0	11.3	11.8	12.3	12.8	12.9	4.3	2.4	1.3	0.7	0.3	0.1
United Kingdom	16.1	16.4	16.4	16.7	16.5	16.1	11.8	11.7	11.7	11.6	11.3	10.9	4.3	4.7	4.7	5.1	5.2	5.2
Western Europe																		
Austria	13.9	12.9	13.8	14.4	13.9	13.0	13.2	13.6	13.9	13.9	13.6	13.3	0.7	–0.7	–0.1	0.5	0.3	–0.3
Belgium	14.6[c]	. .	. .	. .	. .	. .	12.3[c]	. .	. .	. .	. .	. .	2.3[c]	. .	. .	. .	. .	. .
France[a]	16.7	17.0	16.5	15.6	15.2	14.9	10.6	10.5	10.3	10.2	10.3	10.3	6.1	6.5	6.1	5.4	4.8	4.6
Germany, Federal Republic of	12.0	11.5	12.1	12.8	12.3	11.3	12.2	13.0	13.6	13.9	14.0	14.0	–0.2	–1.5	–1.5	–1.1	–1.7	–2.7
Netherlands	16.5	18.1	16.7	16.2	15.6	14.7	8.5	9.0	9.3	9.6	9.8	10.0	8.0	9.1	7.4	6.6	5.8	4.7
Switzerland	13.4	13.4	13.3	12.9	11.9	10.9	10.2	11.0	10.9	11.0	11.0	10.8	3.2	2.4	2.4	1.9	0.9	0.1
Southern Europe																		
Albania	33.4	32.4	30.8	27.8	24.1	21.5	6.5	6.1	5.8	5.6	5.5	5.5	26.9	26.2	25.0	22.2	18.6	16.1
Italy	16.1	15.2	14.9	15.0	14.9	14.5	9.8	10.0	10.3	10.7	10.9	10.8	6.2	5.2	4.6	4.3	4.0	3.8
Greece	16.0	14.9	15.6	16.1	16.0	15.7	9.6	10.0	10.4	10.6	10.8	11.2	6.4	4.9	5.2	5.5	5.2	4.5
Portugal	19.4	18.3	. .	. .	. .	. .	10.6	10.7	. .	. .	. .	. .	8.8	7.6	. .	. .	. .	. .
Spain	19.4	19.3	19.6	19.6	19.3	18.8	8.9	9.2	9.6	9.9	10.0	10.1	10.5	10.1	10.0	9.7	9.3	8.7
Yugoslavia	18.2	18.3	17.8	17.2	16.5	16.1	9.2	9.4	9.5	9.7	9.9	10.2	9.0	8.9	8.3	7.5	6.6	5.9
USSR	17.8	18.7	19.4	18.9	17.6	16.9	7.9	8.4	8.9	9.3	9.4	9.4	9.9	10.3	10.5	9.6	8.2	7.5

[a] Data for the first year of each quinquennial period. [b] Data for 1973-1974. [c] Data for 1970.

3. *Natural growth*

As has already been emphasized, the majority of Europe's populations will continue to grow until the end of the projection period, even though their fertility, as measured by a net reproduction rate, may fall below unity well before then. Nevertheless, the many assumptions of declining fertility rates after 1970 will lead to a slowing down of natural rates of increase, particularly as no further extensive improvements in life expectancies are anticipated.

Table VII.7 summarizes the annual average rates of birth, death and natural increase that would follow from the most likely fertility and mortality trends and patterns discussed above. There is little change in most birth rates in northern and western Europe. In some cases this is because anticipated fertility levels are not very dissimilar from recent actual figures; but it is also because the age structures of these populations are not expected to change greatly with respect to the proportions of people in the childbearing age groups. In eastern Europe the trend of the birth rate is more clearly downward in every case, and notably in Poland, towards the end of the century. The highest rates are still found in southern Europe although the trend is downwards, spectacularly so in the case of Albania.[18]

Of greater significance, however, and the necessary complement of the table of birth rates, is the table of death rates per 1,000 population. These show a marked tendency to rise as the proportions of young persons in the populations tend to decrease as fertility declines. The lowest rates are found in the countries with highest fertility (Albania and Ireland), not because they hold any advantage with regard to their mortality schedules, but because their high fertility sustains an age pattern in which a relatively small proportion of their populations are in the high risk ages with regard to mortality. The crude death rates around 12 per 1,000 of population, when considered along with anticipated crude birth rates around 13 to 15, imply that many countries of Europe will increasingly approach a stable age distribution as the century advances, and, for those which have projected replacement levels of fertility, the approach of a stable age distribution will also herald the approach of a stationary population.

The tendency for death rates to rise and for birth rates to fall reduces the rates of growth or natural increase as expressed per 1,000 of population in the last part of table VII.7. Compared with those of other major regions of the world, Europe's rates of natural increase were already quite low about 1970. For example, the European average was assessed in 1960-1969 as 7.9, with a range between 6.2 in northern Europe to 10.5 in southern Europe, and with a figure of 12.6 in the USSR.[19] The most likely variants reduce these figures further as the century advances. In eastern Europe, whose weighted average natural increase in 1960-1969 was 8.6, only one country reaches that average in 1970-1975, and none thereafter. By 1995-2000 the lowest growth rate per 1,000 of population is 0.6 in Hungary; the highest is 7.5 in Romania, and no other country reaches half that level.

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[18] An interesting comparison between these most likely future trends and past experience can be made by comparing the rates of table VII.7 with the regional summaries back to 1900 given in table II.3.

[19] See table II.3.

FIGURE 18

Percentage distributions of population by age and sex, 1970 and 2000, according to "most likely" variant

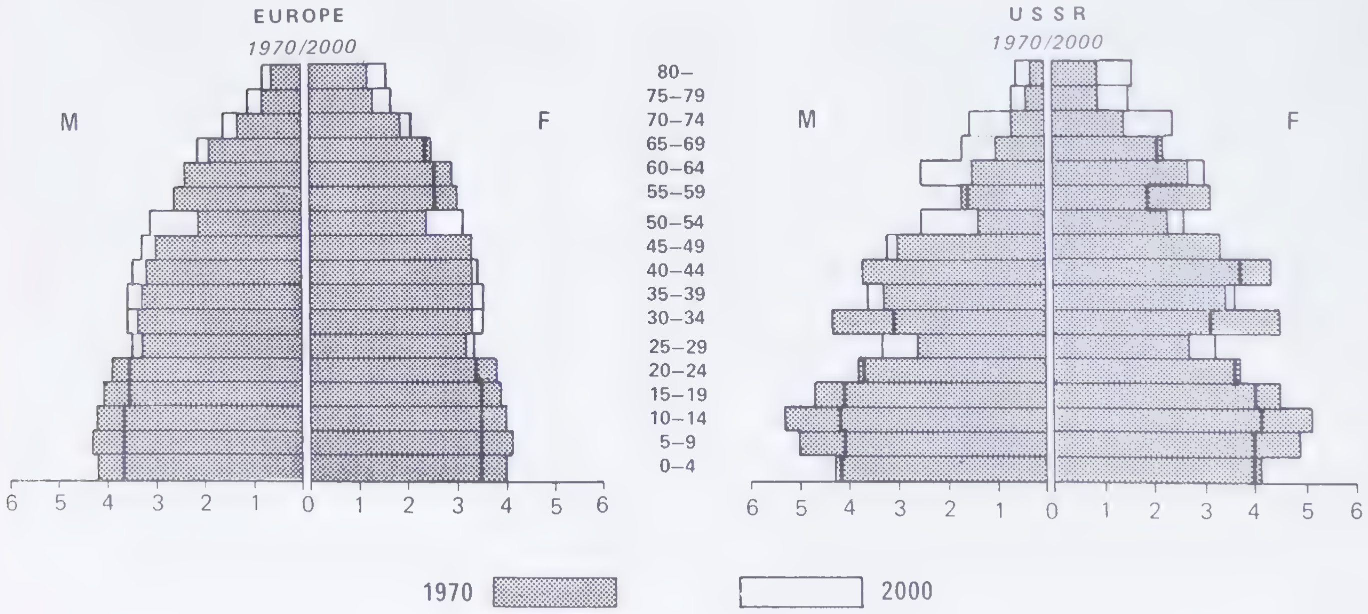


FIGURE 18 (*continued*)

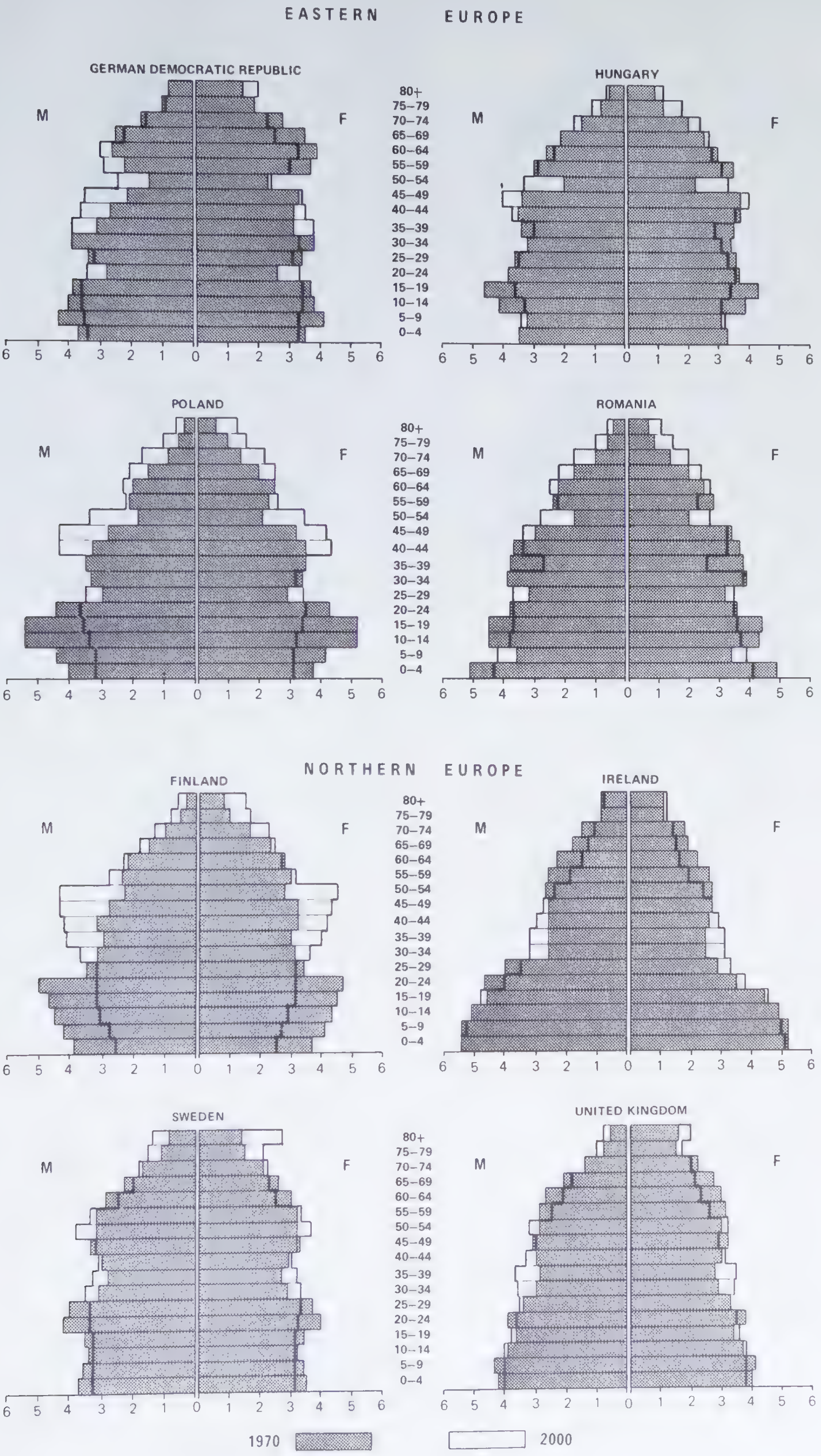
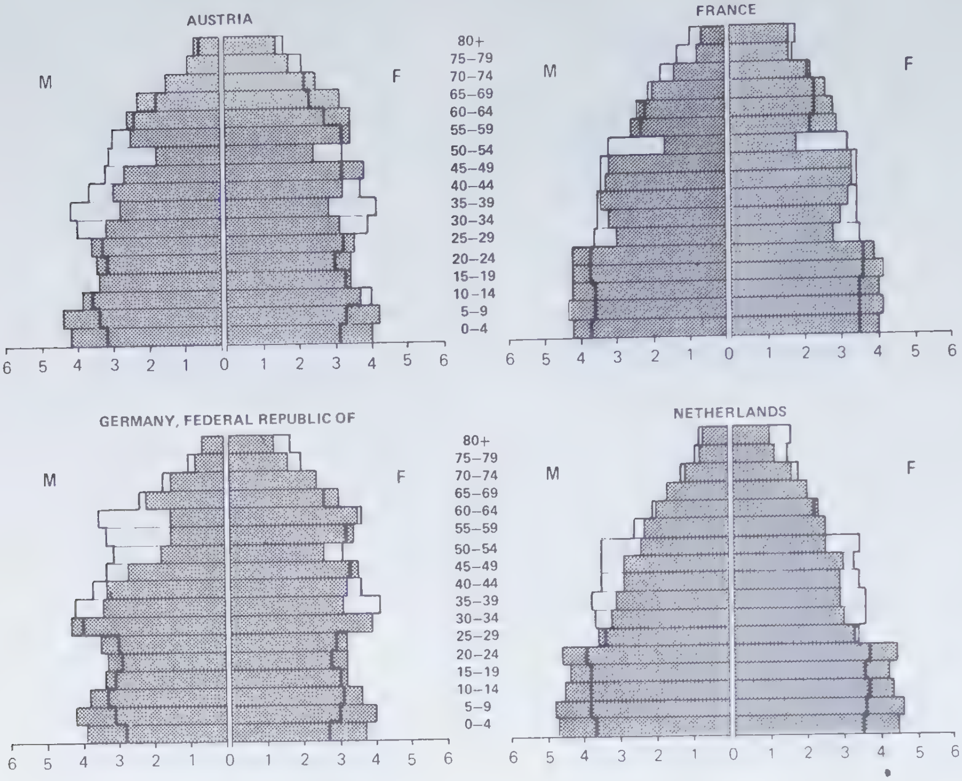
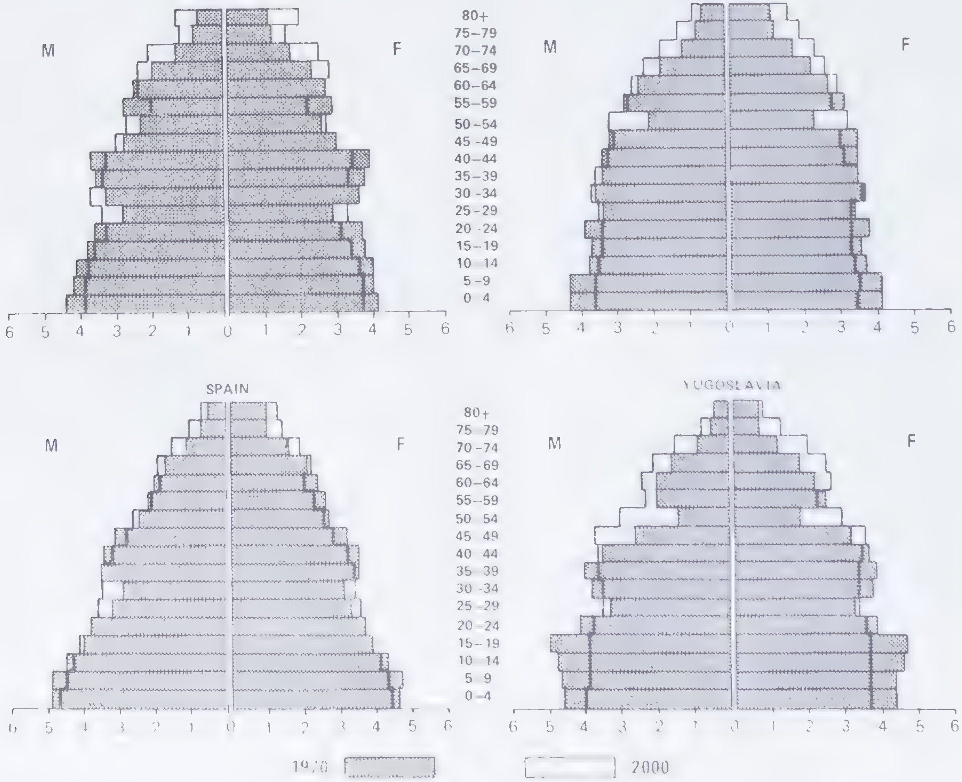


FIGURE 18 *(concluded)*

WESTERN EUROPE



SOUTHERN EUROPE



In northern Europe, with a weighted average natural increase per 1,000 of population of 6.2 in 1960-1969, only Ireland remains above this level, rising to a peak of 14.0 in 1980-1985. All other countries fall below 5 per 1,000 by 1975-1980, and Finland shows a natural decrease from 1985-1990. From this point all rates slow down markedly, except that of the United Kingdom which recovers to 5.2 per 1,000 as a result of the relatively high fertility assumption made.

Western Europe (an average of 6.8 per 1,000 in 1960-1969) shows the slowest growth, with the Federal Republic of Germany indicating natural decrease throughout, and with the Austrian figure decreasing during 1975-1985 and again during 1995-2000. All other countries show a marked slowing down and the pattern at the end of the century, in the period 1995-2000, is one ranging from decrease at the level of −2.7 (Federal Republic of Germany) to a maximum increase of 4.7 (Netherlands).

Southern Europe (with an annual average of 10.5 per 1,000 in 1960-1969) sustains its role as the fastest growing area. The pattern is dominated by the extremely high rate of 26.9 in 1970-1975 in Albania, but only one other country (Spain) comes near the 1960-1969 regional average, with a figure of 10.5 in 1970-1974. All the other countries have rates considerably below 10 throughout the projection period, with the sharpest declines projected for Italy (to 3.8 in 1995-2000) [20] and Yugoslavia (to 5.9). By 1985-1990 only Albania's projected growth is above 10 per 1,000.

Using the assumptions of the Population Division, the pattern in the USSR also shows a decreasing growth rate. Its rate of 12.6 per 1,000 in 1960-1969 was already much below the 1950-1959 figure of 17.2; [21] but this is projected to remain relatively steady between the limits of 9.9 and 10.5 per 1,000 between 1970 and 1985, and then to move downwards to 7.5 per 1,000 by 1995-2000. That the decline in growth rates may be moving somewhat faster than these figures imply is suggested by the published official statistics of the USSR, which show a natural increase of 9.2 per 1,000 in 1970, 9.6 per 1,000 in 1971, and then a drop to 8.9 per 1,000 in 1973.

The projected national patterns of natural growth implied in the birth and death rates according to the most likely variant are illustrated in figure 19. This figure shows that while natural growth is expected to be very low and even negative in some countries, it is still expected to be a substantial growth factor in others. The two extremes are illustrated by Finland and the Federal Republic of Germany on the low side, and by Albania and Ireland on the high side.

4. *Total population growth and size*

Table VII.2 describes the growth implied in the minimum and maximum variants between 1970 and 2000. For Europe and the USSR taken together, the range at the year 2000 was between 826 and 874 million, the range in Europe being 515 and 549 million, and that in the USSR being 311 and 325 million. In terms of percentage growth between 1970 and 2000, Europe's range was from 12 to 20 per cent, and that of the USSR from 28 to 34 per cent. The minimum and maximum growth figures for the combined total of Europe and the USSR were 18 and 25 per cent.

Table VII.8 sets down the growth patterns implied in the most likely variant. These figures summarize the effects of applying the fertility and mortality schedules discussed in some detail above. For Europe, the most likely variant produces results that veer towards the minimum rather than the maximum variant. On the other hand, the figures for the USSR, which are the medium variant of the projections prepared by the United Nations Population Division, are closer to the maximum than to the minimum variant. Within Europe, as defined, the figures show again the expectation of relatively rapid growth in southern Europe (24 per cent 1970-2000) and a marked slowing down in western Europe (7 per cent growth). For the other two regions, northern Europe with 14 per cent growth and eastern Europe with 15 per cent, average regional rates are pushed upwards by the high expectations of a few countries (Czechoslovakia and Romania in eastern Europe, and Ireland and to some extent the United Kingdom in northern Europe). For the majority of countries the most likely variant implies a marked reduction in growth compared with the previous 30 years.

Assuming that there is no migration between the regions of Europe, the most likely variants set out in detail in table VII.8 imply that, proportionally, eastern and northern Europe would maintain their 1970 positions but that the population of western Europe would decrease while that of southern Europe increased. In percentage terms, the following would be the position:

Percentage distribution by regions (no migration)

	1970	*2000*
Eastern Europe	22.5	22.6
Northern Europe	17.5	17.4
Western Europe	32.1	29.9
Southern Europe	27.9	30.1
TOTAL	100.0	100.0

Compared with past regional trends as discussed in chapter II (see table II.2), the most likely variants suggest that eastern and northern Europe's long-term trend towards decreasing proportions will have stopped, that the trend towards an increasing proportion in western Europe between 1940 and 1970 will be reversed, and that

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[20] The natural increase rates shown here for Italy, which are derived from projections supplied by the Population Division, are slightly lower up to 1985 than rates subsequently provided for this period by the Central Institute of Statistics in Italy (chapter VII, foot-note 3). The former gives an average rate of natural increase in 1980-1985 of 4.6, compared with the latter's figure of 5.5 for 1981-1985. However, the estimates of total population are very close in both sets of projections, around 56.6 million in 1980 and 57.9 million in 1985. In some small degree, these similarities are the product of compensating differences in the assumptions used. The Population Division assumed lower levels of fertility than did the Institute; but these variations are not sufficient to introduce any significant difference in the age-sex structure of the projected populations. In short, the longer run figures of the Population Division's most likely variant, beyond 1985, conform reasonably well with the trend that might be expected to follow from the shorter-range projections of the Institute up to 1985.

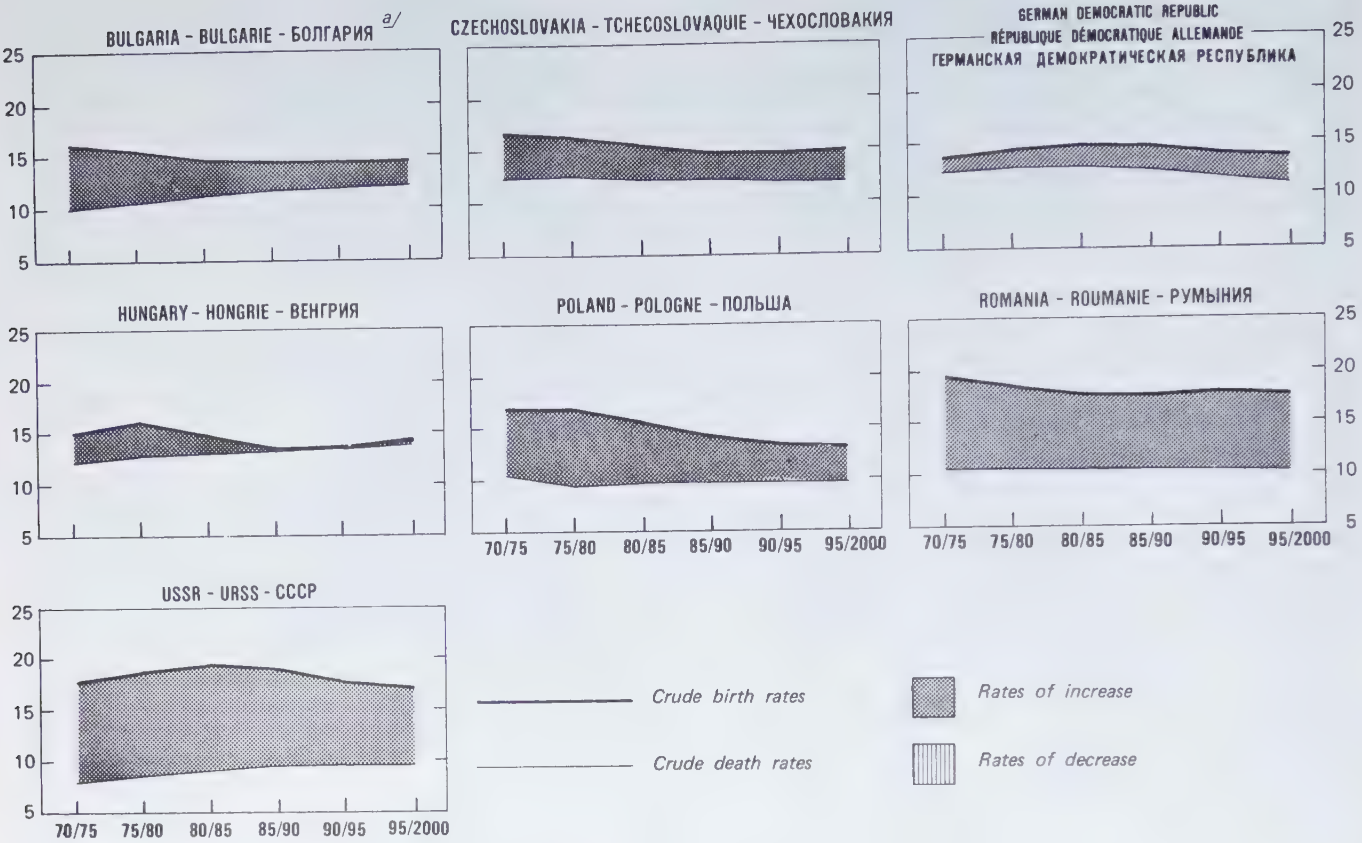
[21] See table II.3.

FIGURE 19

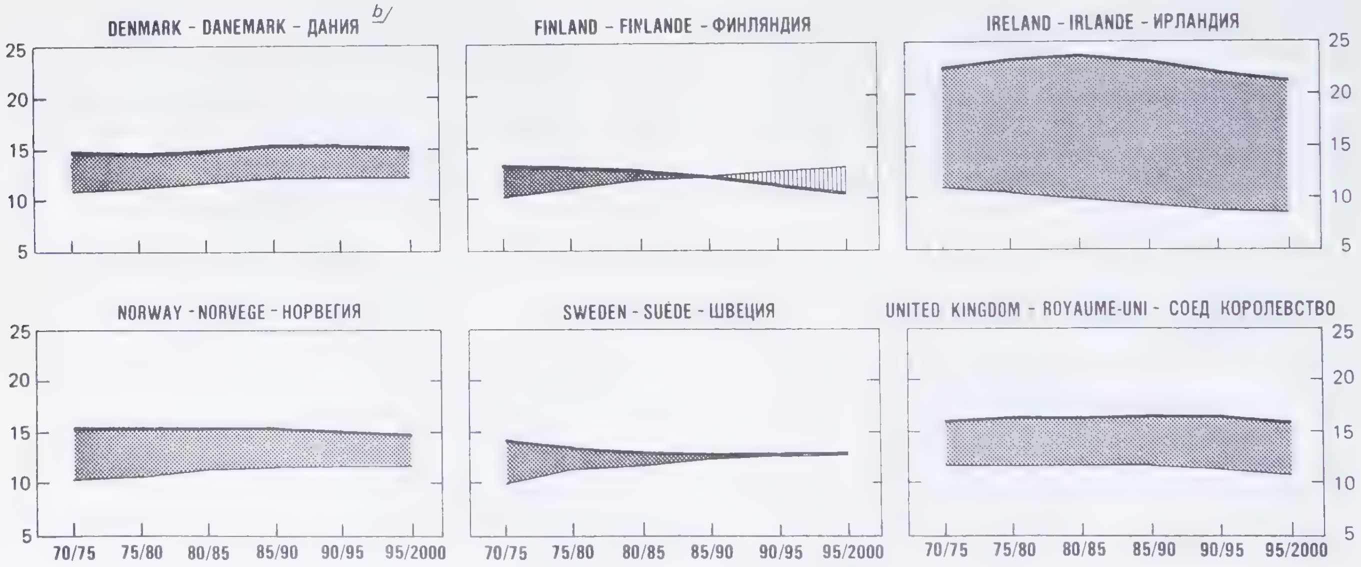
Birth rates, death rates of natural increase, by country, 1970-1975 to 1995-2000, according to "most likely" variant

(5-year average annual rates per 1,000 population)

EASTERN EUROPE



NORTHERN EUROPE



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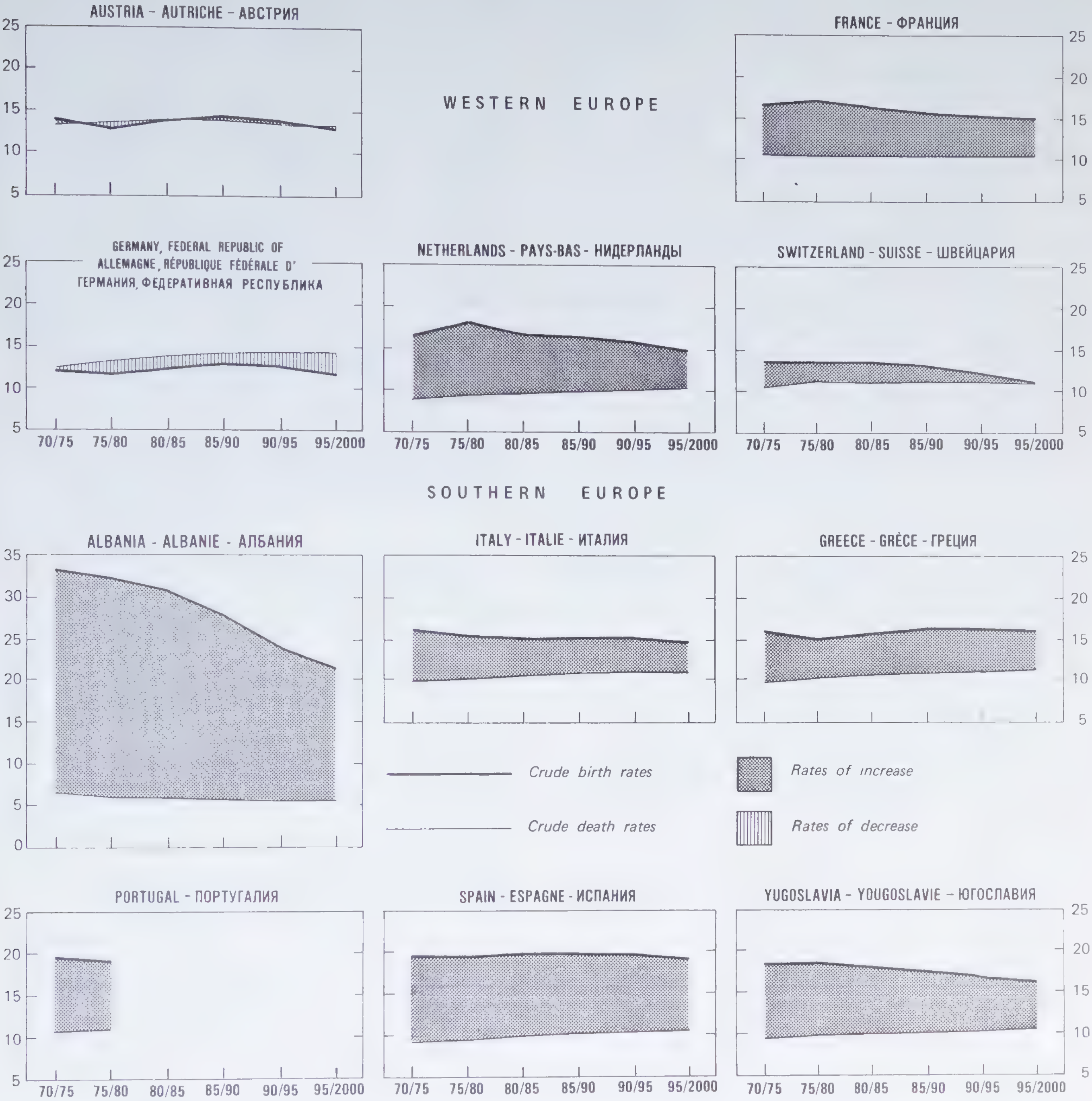
[a] Data for the first year of each quinquennial period.

[b] Data for 1973-1974.

FIGURE 19 (*continued*)



southern Europe will have moved from a constant proportion over the past 30 years to an increasing proportion. But these figures of past experience include the consequences of the large net emigration between 1940 and 1970 from southern to western Europe, as described in chapter VI, while the projections exclude such movement. If this emigration, which is currently at a low level because of economic recession, is revived, the pre-1970 balance as between western and southern Europe could well be restored and, in so far as demographic differentials were involved in the past in emigration push from high-fertility southern Europe and immigration pull to low-fertility western Europe, such differentials could be expected to continue to exert pressures in these same directions in the future; for, as the next sub-section illustrates, southern Europe will continue to have by far the most rapid increases in populations coming of working age because it is the region of Europe which has most recently experienced the demographic transition from high towards low fertility. By contrast, the increases in

TABLE VII.8

Total population size and growth, by country, 1970-2000, according to "most likely" variant

Region and country	*Population size (Thousands)*							*Population growth (Index numbers, 1970 = 100)*					
	1970	*1975*	*1980*	*1985*	*1990*	*1995*	*2000*	*1975*	*1980*	*1985*	*1990*	*1995*	*2000*
Eastern Europe	102 980	106 215	109 325	111 999	114 256	116 455	118 774	103	106	109	111	113	115
Bulgaria	8 515	8 786	9 026	9 215	9 362	9 490	9 602	103	106	108	110	111	113
Czechoslovakia	14 368	14 666	14 952	15 193	15 378	15 603	15 844	102	104	106	107	109	110
German Democratic Republic	17 058	17 193	17 359	17 553	17 761	17 967	18 233	101	102	103	104	105	107
Hungary	10 322	10 484	10 665	10 752	10 767	10 776	10 810	102	103	104	104	104	105
Poland	32 473	33 870	35 219	36 348	37 212	37 896	38 536	104	108	112	115	117	119
Romania	20 244	21 216	22 104	22 938	23 776	24 713	25 649	105	109	113	117	122	127
Northern Europe	80 075	81 691	83 558	85 385	87 342	89 299	91 270	102	104	107	109	112	114
Denmark	4 902	5 049	5 135	5 217	5 305	5 391	5 468	103	105	106	108	110	112
Finland	4 606	4 666	4 711	4 731	4 727	4 689	4 622	101	102	103	103	102	100
Ireland	2 978	3 147	3 346	3 563	3 792	4 034	4 277	106	112	120	127	135	144
Norway	3 879	3 981	4 077	4 164	4 248	4 322	4 389	103	105	107	110	111	113
Sweden	8 042	8 218	8 323	8 380	8 412	8 427	8 433	102	103	104	105	105	105
United Kingdom	55 668	56 630	57 966	59 330	60 858	62 436	64 081	102	104	107	109	112	115
Western Europe	146 762	149 468	151 467	153 325	155 074	156 468	157 359	102	103	104	106	107	107
Austria	7 446	7 466	7 441	7 440	7 460	7 470	7 453	100	100	100	100	100	100
Belgium	9 660	9 751	9 805	9 866	9 927	9 961	9 952	101	102	102	103	103	103
France	50 524	52 137	53 836	55 432	56 864	58 224	59 573	103	107	110	113	115	118
Germany, Federal Republic of	61 001	61 281	60 821	60 397	60 063	59 550	58 718	100	100	99	98	98	96
Netherlands	12 958	13 555	14 190	14 729	15 229	15 679	16 053	105	110	114	118	121	124
Switzerland	5 173	5 278	5 374	5 461	5 531	5 584	5 610	102	104	106	107	108	108
Southern Europe	127 725	132 918	138 086	143 241	148 365	153 316	158 061	104	108	112	116	120	124
Albania	2 169	2 481	2 830	3 206	3 583	3 932	4 261	114	130	148	165	181	196
Greece	8 763	8 811	9 031	9 266	9 522	9 772	9 991	101	103	106	109	112	114
Italy	53 565	55 217	56 626	57 902	59 136	60 315	61 441	103	106	108	110	113	115
Portugal	8 901	9 299	9 660	10 075	10 487	10 885	11 266	104	109	113	118	122	127
Spain	33 956	35 788	37 640	39 556	41 530	43 504	45 449	105	111	116	122	128	134
Yugoslavia	20 371	21 322	22 299	23 236	24 107	24 908	25 653	105	109	114	118	122	126
TOTAL EUROPE[a]	457 542	470 292	482 436	493 950	505 035	515 538	525 464	103	105	108	110	113	116
USSR	242 766	255 038	268 517	283 022	296 976	309 359	321 206	105	111	117	122	127	132
TOTAL EUROPE[a] AND USSR	700 310	725 330	750 953	776 972	802 011	824 897	846 670	104	107	111	115	118	121

[a] Excluding the USSR.

populations coming of working age in western Europe will be considerably below recent levels. Thus the differentials between southern and western (and northern) Europe could well be as great as ever.

Finally, the range of growth over the projection period is very wide among individual countries, although it generally reflects the regional pattern. Thus the highest growth percentage by 2000 compared with 1970 occurs in Albania (96 per cent), Spain (34), Portugal (27) and Yugoslavia (26)—all countries of southern Europe—and the lowest growth occurs in the Federal Republic of Germany (—4 per cent), Austria and Finland (no change), Belgium (3) and Hungary (5). Should the most likely variants continue to apply there would also be considerable reshuffling in terms of the rank order of individual countries. Excluding the USSR, the Federal Republic of Germany would go from first to fourth position, with the United Kingdom, Italy and France filling the first three positions in that order. These four countries and Spain would account for 55 per cent of the population of Europe (excluding the USSR) in 2000, compared with only about 49 per cent in 1970. Only Spain among them could be classed as a high fertility country around 1970. Thus size alone does not appear to be related in any way to growth expectations.

5. *Structural patterns and their distributions*

Over the past 30 years or so, the structure of many European populations has been very much at variance with the stable age composition appropriate to their levels of fertility and mortality, for two basic reasons. First, the sharp fall in birth rates in the 1930s followed by the marked rise after the Second World War (the baby boom years) skewed the age structures of many countries, especially in northern and western Europe, away from the stable pattern. Secondly, war casualties in both 1914-1918 and 1939-1945 and massive repatriation movements had major impacts upon the sex-age structures of some countries. In a few cases, notably in Portugal and Ireland, emigration has also had significant effects. The consequences of these events are clearly visible above age 29 years in the population profiles illustrated in this chapter. The broad age structures of the regions of Europe and the USSR as they were in 1970 and as they would change under the application of the most likely national variants until the year 2000, are summarized in table VII.9. For Europe as a whole a steady reduction is to be expected in the proportion in the young dependent age-groups (0-14 years), from 24.9 to a minimum of 21.7 by the year 2000. At the other end of the dependant scale, that is at ages 60 and over, the proportion aged 60-74 years rises only slightly, but there is a steady upward movement in the proportions aged 75 and over. As a total group aged 60 and over, the proportion of aged dependants rises from 16.7 per cent of the total population in 1970 to 18.3 per cent in 2000.

The trends with regard to these dependent groups in eastern Europe are very close in every respect to the European average. In northern Europe the decrease in young dependants is less steep and while there is a marked increase in the proportion of very old dependants (age 75 +), the proportion aged 60-74 tends to decline. This reflects the ageing of the cohorts which were seriously depleted by the events described above. This explains much of the reduction of the total proportion of aged dependants aged 60 and over from around 19 per cent between 1975 and 1985 to 17.4 per cent in the year 2000.

In western Europe, which is the region that expects the slowest growth between 1970 and 2000, the decline in the proportion of young dependants is above the European average, but, unlike in northern Europe, there is no clear indication of a decrease in the proportion aged 60 and over, which was 18.5 per cent in 1970 and rises slightly to 19.6 per cent in the year 2000. The absence of a decline here is due largely to the fact that the countries of western Europe seriously affected by the events described above have also been the ones which absorbed since about 1950 the greatest numbers of immigrants, who were broadly of an age which supplemented the deficit cohorts in the non-migrant sectors of their populations, and who will begin to move into the 60 and over age groups from about 1980.

Southern Europe's age pattern is a reflection of its higher and more recently declining fertility compared with other regions and of the tendency for life expectations also to have been lower. The proportion of young dependants is considerably above the European average but declines steadily from 26.4 per cent to 23.5 per cent, and the proportion aged 60 and over rises steadily from 14.5 to 17.6. As the countries of this region had high fertility in the 1930s, in direct contrast to those of northern and western Europe, the ageing process is not being damped down by these past events and is moving more closely along the lines of the stable model. The rising proportion of aged also reflects the ambition in their most likely variants to lift life expectations to a combined sexes average of about 72 years.

The USSR, also a high fertility area in the relatively recent past, shows a marked decrease in the proportion aged 0-14 from 28.6 in 1970 to 24.6 in 2000, thus reflecting, as is to be expected, the substantial decline in fertility in the last two decades or so, as well as a most likely assumption which implies a further, although slower, decline in the future.

At the aged dependants level, the situation in the USSR reflects until about 1985 the effect of the severe losses of young male lives during the war of 1914-1918. This accounts particularly for the tendency for the proportion of the population aged 60-74 years to show a slight decline between 1975 and 1985 to 9.5 per cent and then the sharp rise to 13.1 per cent as the cohort depleted earlier by war losses give way to the larger postwar cohorts. By the end of the century the proportion of the population aged 60 and over would rise to 17.4 per cent compared with only 12.0 per cent in 1970, which is the most striking change among the regions under consideration.

Considered in terms of proportions, the increasing fraction of populations in the older age groups as reve[illegible] in table VII.9 is substantially an offset to the decreasing

TABLE VII.9

Relative distributions of population by broad age-groups, by region, 1970-2000, according to "most likely" variant

(Age groups as percentages of total population)

Region	Age-group	1970	1975	1980	1985	1990	1995	2000
Europe[a]	0-14	24.9	24.0	23.0	22.4	22.3	22.1	21.7
	15-59	58.4	58.7	60.4	60.4	60.1	60.0	60.0
	15-44	42.1	42.3	42.7	43.0	43.1	42.6	42.0
	45-59	16.3	16.4	17.7	17.4	17.0	17.4	18.0
	60+	16.7	17.3	16.6	17.2	17.6	17.9	18.3
	60-74	12.9	13.2	11.9	12.1	12.3	13.2	13.2
	75+	3.8	4.1	4.7	5.1	5.3	4.7	5.1
Eastern Europe	0-14	24.7	23.1	23.0	22.6	22.1	21.3	20.0
	15-59	59.7	60.5	61.8	61.5	61.1	61.1	60.9
	15-44	44.1	44.4	43.8	43.6	43.9	43.6	42.0
	45-59	15.6	16.1	18.0	17.9	17.2	17.5	18.9
	60+	15.6	16.4	15.2	15.9	16.8	17.6	18.3
	60-74	12.4	12.8	11.1	11.3	12.1	13.5	13.6
	75+	3.2	3.6	4.1	4.6	4.7	4.1	4.7
Northern Europe	0-14	24.1	23.8	23.1	22.8	23.0	23.0	22.9
	15-59	57.6	57.2	57.9	58.0	58.3	59.1	59.7
	15-44	39.4	39.9	41.4	42.4	42.6	41.7	41.7
	45-59	18.2	17.3	16.5	15.6	15.7	17.4	18.0
	60+	18.3	19.0	19.0	19.2	18.7	17.9	17.4
	60-74	13.9	14.2	13.8	13.6	12.9	12.3	11.7
	75+	4.4	4.8	5.2	5.6	5.8	5.6	5.7
Western Europe	0-14	24.2	23.1	21.5	20.5	20.6	20.4	19.9
	15-59	57.3	57.9	60.7	61.2	60.8	60.7	60.5
	15-44	41.2	41.7	42.9	43.2	43.0	42.3	41.8
	45-59	16.1	16.2	17.8	18.0	17.8	18.4	18.7
	60+	18.5	19.0	17.8	18.3	18.6	18.9	19.6
	60-74	14.1	14.1	12.3	12.4	12.6	13.8	14.0
	75+	4.4	4.9	5.5	5.9	6.0	5.1	5.6
Southern Europe	0-14	26.4	25.7	24.6	24.0	23.8	23.7	23.5
	15-59	59.1	58.9	60.3	60.2	59.5	59.0	58.9
	15-44	43.1	42.5	42.5	42.6	42.9	42.5	42.2
	45-59	16.0	16.4	17.8	17.6	16.6	16.5	16.7
	60+	14.5	15.4	15.1	15.8	16.7	17.3	17.6
	60-74	11.2	11.8	11.2	11.4	12.1	13.1	12.9
	75+	3.3	3.6	3.9	4.4	4.6	4.2	4.7
USSR	0-14	28.6	25.8	24.4	25.2	25.8	25.5	24.6
	15-59	59.4	60.8	62.5	61.3	58.8	58.6	58.0
	15-44	45.5	45.1	45.4	42.6	43.2	43.2	42.8
	45-59	13.9	15.7	17.1	18.7	15.6	15.4	15.2
	60+	12.0	13.4	13.1	13.5	15.4	15.9	17.4
	60-74	9.5	10.5	9.6	9.5	11.0	11.9	13.1
	75+	2.5	2.9	3.5	4.0	4.4	4.0	4.3

[a] Excluding the USSR.

proportions in the 0-14 age-groups, rather than any major change in the proportions of working age (15-59). With regard to this sector of the population, there is a slight shift upwards from 1970 to 1980 in Europe excluding the USSR, when the proportion aged 15-59 rises from 58.4 to 60.4 per cent; but thereafter there is virtually no change. A similar pattern holds for eastern and western Europe. Northern Europe has a slightly lower, but fairly stable proportion of working age, as has southern Europe. In the USSR, the proportion rises from 59.4 in 1970 to the high level of 62.5 in 1980, but it then falls away again to 58 per cent by the year 2000.

Within the working ages, there is a relatively stable balance between the younger age group (15-44) and the older group (45-59). In northern and western Europe there is a slight shift upwards in the proportion in the younger group (reflecting the baby boom of past years), and an opposite tendency in southern Europe and the USSR (reflecting past declines in fertility); but the changes are slight. The most significant change implied for Europe in table VII.9 is the increasing proportions above the age of 59 years (particularly in the 75 and over age group) and the decline in the proportion of young persons aged 0-14; but in social terms the total burden of dependency does not change greatly in the sense that the proportion of population of working age is not noticeably reduced. The significant question in terms of social policy is whether the total cost of dependency will increase as the balance of the proportions shifts from young to old.

More significant probably than changes in the proportions of the age groups will be the numerical trends of each group. These are shown in tables VII.10, VII.11 and VII.12 in terms of index numbers (1970 = 100). The first conclusion is that, if the most likely variant materializes in the future, there will be virtually no increases in the numbers of children of school age (5-14) in Europe. There will in fact be a decrease until around 1985 and then a slight recovery to the 1970 level by the end of the century. By regions, there will be a slight decrease in eastern Europe, a much more pronounced decrease in western Europe, a slight increase of 8 per cent by the year 2000 in northern Europe and an increase of 10 per cent in southern Europe. The USSR, after a decrease to 1980, would recover to finish the century with 6 per cent more children than in 1970.

In eastern Europe, the only country clearly showing an increase of population aged 5-14 by the year 2000 is Romania; in Bulgaria, Czechoslovakia and Hungary this population would increase until around 1990, but then

TABLE VII.10

Changes in population aged 5-14, by country, 1970-2000, according to "most likely" variant

Region and country	*Numbers in 1970 (thousands)*	*Index numbers (1970 = 100)*					
		1975	*1980*	*1985*	*1990*	*1995*	*2000*
Europe[a]	76 063	99	97	96	98	99	100
Eastern Europe	17 161	94	98	98	101	99	96
Bulgaria	1 286	99	102	104	103	101	101
Czechoslovakia	2 233	97	100	105	104	99	98
German Democratic Republic	2 747	97	87	87	91	93	91
Hungary	1 473	106	98	106	106	99	96
Poland	6 211	85	94	88	89	85	80
Romania	3 212	107	121	116	116	118	125
Northern Europe	12 844	102	100	100	103	106	108
Denmark	754	104	101	96	98	102	105
Finland	785	93	82	75	75	72	68
Ireland	615	103	108	118	129	137	142
Norway	619	103	101	98	101	102	103
Sweden	1 095	105	105	103	101	99	99
United Kingdom	8 976	103	100	101	104	108	111
Western Europe	23 825	101	93	87	89	90	89
Austria	1 214	103	91	79	80	84	84
Belgium	1 554	97	88	83	84	88	87
France	8 370	100	100	103	104	102	102
Germany, Federal Republic of	9 500	103	87	73	74	77	77
Netherlands	2 358	102	96	98	103	102	101
Switzerland	829	95	86	85	86	86	82
Southern Europe	22 232	103	101	101	104	108	110
Albania	592	108	117	132	145	152	151
Greece	1 426	100	99	93	94	100	105
Italy	8 518	106	102	98	97	99	101
Portugal	1 672	103	99	98	101	105	108
Spain	6 262	103	103	107	113	120	125
Yugoslavia	3 762	97	96	99	102	103	103
USSR	49 071	98	85	92	101	107	106

[a] Excluding the USSR.

slip back to only slightly above or below the 1970 level. In Poland this group would be only 80 per cent of the 1970 level at the end of the century. In western Europe, four countries (Austria, Belgium, the Federal Republic of Germany and Switzerland) would show a marked decline and France and the Netherlands a slight increase of up to 2 per cent by the year 2000. In northern Europe, the increase in children would be particularly marked in Ireland (42 per cent), substantial in the United Kingdom (11 per cent) and quite slight in Denmark (5 per cent) and Norway (3 per cent). Sweden, after an increase to 1980 would drop back slightly below the 1970 position by the end of the century and Finland would show a very marked decrease of 32 per cent. In southern Europe, Greece, Italy, Portugal and Yugoslavia would show a decline until about 1985 and then pick up, and all countries would show an increase by the end of the century, particularly Albania (51 per cent) and Spain (25 per cent).

The figures in table VII.10 are the most conjectural of the projections as they depend increasingly, and after 1984 wholly, on future vital events. Slightly less conjectural, at least for 15 years ahead, is the trend of the population aged 15-19, the group which each year forms the bulk of the entrants to the labour force. Table VII.11 sets out the pattern for this age group according to the most likely variants.

In this age group, declining numbers are now absolutely certain until 1985 (as these people are already born), and seem certain to continue below 1970 levels until 1990 and beyond (in the light of recent fertility trends) in all countries of eastern Europe, except Romania after 1985, and the German Democratic Republic up to 1980. The

TABLE VII.11

Changes in population aged 15-19, by country, 1970-2000, according to "most likely" variant

Region and country	*Numbers in 1970 (thousands)*	*Index numbers, 1970 = 100*					
		1975	*1980*	*1985*	*1990*	*1995*	*2000*
Europe[a]	36 354	103	105	104	99	101	103
Eastern Europe	9 414	97	85	86	88	91	89
Bulgaria	673	97	93	95	99	99	97
Czechoslovakia	1 283	88	85	83	91	92	88
German Democratic Republic	1 306	101	109	94	89	94	98
Hungary	917	90	71	76	81	88	82
Poland	3 428	100	81	73	78	81	79
Romania	1 807	99	78	111	103	102	103
Northern Europe	5 817	104	114	112	108	112	114
Denmark	373	99	104	105	97	97	100
Finland	426	94	89	81	69	69	68
Ireland	268	109	115	116	126	138	149
Norway	302	101	103	108	99	101	104
Sweden	553	96	102	105	103	101	98
United Kingdom	3 895	107	120	117	113	118	121
Western Europe	10 942	105	112	107	94	96	97
Austria	506	112	126	119	97	92	98
Belgium	722	106	109	100	89	88	93
France	4 193	99	101	99	101	104	103
Germany, Federal Republic of	4 022	110	125	117	87	85	89
Netherlands	1 109	104	109	107	97	111	107
Switzerland	390	106	108	95	90	92	94
Southern Europe	10 178	105	112	111	109	111	115
Albania	216	127	144	149	170	190	206
Greece	660	103	103	112	103	97	105
Italy	3 887	103	115	115	108	106	106
Portugal	763	103	112	109	107	107	112
Spain	2 669	113	121	119	123	128	137
Yugoslavia	1 983	96	93	91	91	96	98
USSR	22 466	111	106	90	95	105	115

[a] Excluding the USSR.

Romanian situation is unusual as there will be a very sharp decline in numbers until around 1980 to a level of 22 per cent below the 1970 figure, followed by an even sharper increase raising the numbers aged 15-19 years 11 per cent above the 1970 figure. This is an echo effect of the marked oscillations of the birth rate in Romania, first downwards in response to the very permissive legislation relating to abortion in 1957, and then steeply upwards following legislation strictly controlling abortion which was introduced in 1966. In the longer run, the Romanian figure settles down by the year 2000 to an increase of young persons aged 15-19 of only 3 per cent above the 1970 level. By the end of the century, Romania is the only country of eastern Europe which shows any increase over 1970 in the population aged 15-19 years. This pattern reflects the sharp downturn in birth rates in the countries of eastern Europe over the past twenty years or so, and the effects are particularly marked in Czechoslovakia, Hungary and Poland.

For similar reasons, after an initial increase between 1970 and 1975, the USSR shows a marked decline until around 1985, when those aged 15-19 will be only 90 per cent of the 1970 figure; but as the variant applied in the case of the USSR implies a rise in fertility until 1990, the numbers aged 15-19 show an increase thereafter, to 15 per cent above the 1970 figure by the end of the century.

In northern and western Europe, the patterns of change in this economically important age group are variable. Ireland shows a remarkable increase of 49 per cent by the year 2000, but it must be emphasized that only a very minor loss is assumed through emigration compared with the large outflow of recent years. Of the

TABLE VII.12

Changes in population aged 15-59, by country, 1970-2000, according to "most likely" variant

Country	Numbers in 1970 (thousands)	*Index numbers (1970 = 100)* 1975	1980	1985	1990	1995	2000
Europe[a]	267 265	103	109	112	113	116	120
Eastern Europe	61 509	105	110	112	114	116	117
Bulgaria	5 311	102	106	105	105	106	107
Czechoslovakia	8 613	102	107	107	110	113	116
German Democratic Republic	9 309	102	110	113	115	116	116
Hungary	6 386	101	103	102	102	103	104
Poland	19 568	108	115	117	119	121	124
Romania	12 322	105	109	114	116	119	121
Northern Europe	46 102	101	105	108	110	114	118
Denmark	2 900	102	105	107	110	112	114
Finland	2 820	104	107	109	109	109	108
Ireland	1 583	106	113	120	129	140	153
Norway	2 226	102	105	108	111	115	120
Sweden	4 790	100	100	101	102	104	105
United Kingdom	31 783	101	105	108	111	115	120
Western Europe	84 175	103	109	111	112	113	113
Austria	4 124	102	108	111	111	112	112
Belgium	5 548	102	108	108	108	107	108
France	28 871	103	111	113	116	119	123
Germany, Federal Republic of	35 095	102	108	109	107	105	101
Netherlands	7 532	107	113	118	122	128	132
Switzerland	3 005	103	107	109	110	111	113
Southern Europe	75 479	104	110	114	117	120	123
Albania	1 108	118	139	160	182	208	234
Greece	5 152	98	102	106	107	107	110
Italy	32 083	102	107	109	111	112	113
Portugal	5 163	105	113	119	123	128	133
Spain	19 642	106	113	117	122	127	134
Yugoslavia	12 331	107	115	119	121	123	126
USSR	144 210	108	116	120	121	126	129

[a] Excluding the USSR.

remainder of the countries, only the United Kingdom shows a substantial and relatively stable increase, to 20 per cent around 1980, followed by a decline and then recovery to about the same level by the end of the century. Again, however, this does not allow for any emigration, which has been usual with the United Kingdom. The increases in past years in births associated with the baby boom and relatively high fertility until recently in the Netherlands and Norway account for sharp increases in this age group by 1980 in most countries of northern and western Europe. The rise is particularly steep in Austria and the Federal Republic of Germany. But after 1980 the recent declines in fertility begin to exert their influence and by the year 2000 the numbers aged 15-19 will have declined to below 1970 levels in six of the countries of northern and western Europe and will be less than 5 per cent above that level in all but three countries. The marked fertility declines assumed after 1970 by both Finland and the Federal Republic of Germany begin to exert a strong influence on this age group in the latter years of the century, finishing with a decline to 68 per cent of the 1970 figure in the case of Finland and 89 per cent in the case of the Federal Republic of Germany. Only the United Kingdom and Ireland avoid a decline at some point in the projection period.

By contrast, and again reflecting high fertility trends in the very recent past, southern Europe emerges as a region of rapid growth for most countries with regard to young people reaching employable age (15-19 years). Albania doubles its numbers by the end of the century. Spain's figure increases by over one-third and Portugal's by 12 per cent. But in Italy and Greece rapid growth until 1985 is followed by a decrease, with the figures for the year 2000 only 6 and 5 per cent respectively above the 1970 levels. Yugoslavia, because of the steepness of past declines in fertility and a most likely assumption of a continuing low fertility around replacement level, shows a reduction of population aged 15-19 until 1985 followed by a slow recovery by the year 2000, although not quite back to the level of 1970.

By contrast with the young dependent group and those on the threshold of employment aged 15-19, the population of working ages 15-19 years will, according to the most likely variants, show an increase in all countries and in all regions of Europe until the end of the century. In some the increase will still be rapid: 134 per cent in Albania; 53 per cent in Ireland (assuming net emigration after 1976 of only 5,000 a year); and about one-third in Spain, Portugal and the Netherlands.

In some countries in which the growth of the work force had been adversely affected by the reduced numbers of births during the years of economic depression in the 1930s and, in a few cases, by heavy war casualties as well, there will be a period of rapid growth while the much larger cohorts born in the 1950s and 1960s keep augmenting the numbers of working age, but the position will then stabilize or in some cases decline again, in delayed response to the fall in fertility from about 1960 onwards. In the latter half of the projection period, the decreases seen with respect to the numbers aged 15-19 set out in table VII.11 will begin to have their effect on the growth of population of working age as presented in table VII.12. The situation described above applies in the Federal Republic of Germany, where an increase of those aged 15-59 of 9 per cent over 1970 by 1985 is then followed by a decrease until the numbers by the end of the century are almost back to the 1970 level. In other countries, a marked increase up to 1980 or 1985 is followed by virtual stability (Belgium, Bulgaria, Finland, Hungary). Until about 1990 these trends are substantially the product of demographic events that have already occurred and in that sense they are independent of the assumptions applied in the projections.

As table VII.12 shows, the fastest growing populations of working age will still be in southern Europe and in the USSR. Increases over the projection period will still be considerable but with wide variations within each of the other regions: by the year 2000, increases over 1970 levels will range between 7 and 24 per cent in eastern Europe, between 5 and 53 per cent in northern Europe, and between 1 and 32 per cent in western Europe. But in many of these countries the pace of growth will be slowing down or will have stabilized towards the end of the century, particularly among the majority of west European countries, and this retardation will continue into the twenty-first century.

Table VII.9 summarizes the changes implied in the most likely variants with respect to broad age groups for the regions of Europe and the USSR. It was emphasized that the proportions respectively in the young dependent groups (0-14 years) and aged group (60 and over) were inter-related and that as fertility decreased the proportions aged 60 and over would tend to increase. As fertility in the most likely variants tends to be below immediate past levels for the majority of countries, and as all the countries except the Netherlands assume constant or decreasing levels of mortality, the proportion of aged should continue to rise as the projections are carried forward in time and as populations assume age compositions that approach the stable models appropriate to their levels of fertility and mortality. Yet, as the regional analysis of table VII.9 shows, such a consistent increase in the proportion of aged does not occur, even though there is a remarkably consistent decline in the proportion of the young dependent groups aged 0-14. In fact there are, as table VII.13 shows, some periods of decline of aged people, not only as proportions of total population but also in actual numbers. This is so for Europe as a whole and occurs in every region at ages 60-74 between 1975 and 1980. The same phenomenon is apparent in the USSR. In the cases of northern and southern Europe and of the USSR, this temporary decrease at these ages is more than offset by the increased numbers aged 75 and over.

This check in the growth of the group aged 60-74 years reflects the casualties suffered by these regions in the Second World War and in some cases the major disturbances of age composition associated with post-war resettlements. Moving on to 1990 and beyond we see that a further check to growth occurs (but to the point of decrease only in northern Europe) as the deficit cohorts born in the 1930s attain *vieillard* status.

These are the factors which tend to damp down the increase in the proportions of persons aged 60-74 years;

TABLE VII.13

Aged persons in Europe 1970-2000, according to "most likely" variant

(Actual numbers in 1970, percentage distribution and index numbers)

Region and age group	Numbers in 1970 (thousands)	As percentage of population							Index numbers, 1970 = 100					
		1970	1975	1980	1985	1990	1995	2000	1975	1980	1985	1990	1995	2000
Europe[a]														
60-74	58817	12.9	13.2	11.9	12.1	12.3	13.2	13.2	105	98	101	106	116	118
75+	17481	3.8	4.1	4.7	5.1	5.3	4.7	5.1	113	130	144	152	139	154
60+	76298	16.7	17.3	16.6	17.2	17.6	17.9	18.3	107	105	112	117	121	126
Eastern Europe														
60-74	12821	12.4	12.8	11.1	11.3	12.1	13.5	13.6	106	95	99	108	123	126
75+	3253	3.2	3.6	4.1	4.6	4.7	4.1	4.7	117	138	158	166	146	171
60+	16074	17.6	16.4	15.2	15.9	16.8	17.6	18.3	108	103	111	119	128	135
Northern Europe														
60-74	11084	13.9	14.2	13.8	13.6	12.9	12.3	11.7	104	104	104	102	99	97
75+	3554	4.4	4.8	5.2	5.6	5.8	5.6	5.7	110	123	135	142	142	145
60+	14638	18.3	19.0	19.0	19.2	18.7	17.9	17.4	106	108	116	116	109	108
Western Europe														
60-74	20627	14.1	14.1	12.3	12.4	12.6	13.8	14.0	102	90	92	95	105	107
75+	6459	4.4	4.9	5.5	5.9	6.0	5.1	5.6	113	129	141	144	124	136
60+	27086	18.5	19.0	17.8	18.3	18.6	18.9	19.6	105	99	103	107	109	114
Southern Europe														
60-74	14285	11.2	11.8	11.2	11.4	12.1	13.1	12.9	110	107	115	125	140	143
75+	4215	3.3	3.6	3.9	4.4	4.6	4.2	4.7	113	129	148	162	154	175
60+	18500	14.5	15.4	15.1	15.8	16.7	17.3	17.6	107	112	123	134	143	150
USSR														
60-74	22909	9.5	10.5	9.6	9.5	11.0	11.9	13.1	117	112	117	142	161	184
75+	6109	2.5	2.9	3.5	4.0	4.4	4.0	4.3	122	155	187	216	203	227
60+	29018	12.0	13.4	13.1	13.5	15.4	15.9	17.4	118	121	132	158	170	193

[a] Excluding the USSR.

but no such check occurs amongst the *grands vieillards* aged 75 and over. For these the depredations of the first World War had almost disappeared by 1975. Thus the index of increase for those aged 75 and over is very much higher in all regions than for the 60-74 age groups. It is also consistent throughout. The contrast between the 60-74 and the 75 and over groups is particularly striking in northern and western Europe. As already indicated, the numbers aged 60-74 years actually decrease in northern Europe after 1990, reflecting essentially the marked fertility decline of the 1930s; but by about 1990 western Europe, which followed much the same fertility pattern as northern Europe, recovers from a considerable decline about the middle of the period, in large part because of the considerable population gains in western Europe through recent immigration.

In terms of absolute numbers, however, by far the most substantial increases, compared with the base year in 1970, will be in the countries and regions whose fertility decline has been comparatively recent, that is in eastern and southern Europe and in the USSR. In other words, the numbers of aged people in these regions will reflect the relatively high fertility patterns of periods between about 30 and 50 years ago. This is apparent in the USSR, which shows an increase between 1970 and 2000 of 127 per cent for *grands vieillards* aged 75 and over, and 93 per cent for the total group aged 60 and over. Other countries in which the numbers of aged will more than double between 1970 and 2000 are Bulgaria and Romania, each by 115 per cent, Poland by 112 per cent and Albania by 109 per cent.

These trends in the older groups are predictable in a sense that cannot be applied to younger ages, because the people concerned are all already born and are not likely to be much affected by migration. Thus analysis of their characteristics can safely, and with advantage, be carried further as they have important implications in terms of social policies.

First, at all ages above 59 years there is a marked preponderance of women. This is apparent in the sex ratios given in table VII.14. Women exceed men by more than 10 per cent in every country in 1970, and in some countries by over 30 per cent. Among the *grands vieillards* aged 75 and over the average discrepancy rises much higher, in almost all countries above 25 per cent and in some cases above 50 per cent. It is clear from the countries affected that most of the very low figures reflect not only the increasing differentials in mortality beyond middle age ranges, that is around 50 years,[22] but also the disasters occurring in Europe over the past fifty years or so which were heavily sex selective. These have tended to keep the proportions of ageing men below the proportion of ageing women, thus supplementing the effect of the greater longevity of women. These differences in individual countries are clearly shown in table VII.14.

As a proportion of each sex, the percentage of women aged 60 and over very greatly exceeds the corresponding percentage of men throughout Europe, and at ages 75 and over the ratio increases further. This pattern is expected to remain throughout the projection period. It is of interest to note that in countries with relatively long histories of low fertility, mostly in northern and western Europe, the proportion of women aged 60 and over will be about the level of 23 per cent to be expected in a stationary population by about 1990;[23] but nowhere do males reach that level.

Finally, with regard to the aged groups, tables VII.15 and VII.16 set out the indexes of change by decade for each sex, taking 1970 as the base. For most countries there is a similarity in the rate of change in each sex, reflecting their respective mortality schedules, and again, where there are marked differences, these can be attributed to the after-effects of war, post-war resettlements and post-war periods of heavy emigration or immigration. Table VII.16 emphasizes again the rapid increases expected in the number of *grands vieillards* in most countries, especially with regard to women, although the delayed effects of the disturbances referred to above continue to be felt among the male populations of a minority of countries (German Democratic Republic, Austria, Federal Republic of Germany).

Putting together the changes discussed in this section with respect to the young (0-14 years) and old (aged 60 years and over), what is the total dependency burden that has to be supported by the population of working age (15-59 years)? The answer is given in table VII.17.

The pattern by regions is one of a declining rather than an increasing dependency burden, in Europe as a whole and in eastern, northern and western Europe. Southern Europe experiences a decline to the middle of the projection period and then a rise to approximately the present position. A similar U-shaped curve applies to the USSR where, however, the ratio of dependent to working-age group rises by the year 2000 considerably above the 1970 figure, and much above the minimum figure expected around 1980.

In general, the long-term trend is naturally one towards conformity with the stable population model since most of the projections incorporate only minor changes in vital events and neither future migrations (with minor exceptions) nor future possible man-made disasters are taken into account (figure 18). But the exceptions to the over-all trend again are the countries whose current age structures are the furthest removed from the stable model, as a result of recent rapid fertility and mortality changes, of war and post-war disturbances, or of a combination of both, or again of anticipated changes of a substantial nature, particularly with regard to fertility.

Thus Bulgaria, as a result of high fertility in the relatively recent past followed by a very steep decline to the present, and with an assumption of constant fertility which is almost certainly below replacement level, moves markedly against the regional trend. Romania also moves against the trend, reflecting its assumption of relatively high future fertility following the impact of the

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[22] See chapter III.

[23] Countries with levels above 20 per cent by 1990 are Bulgaria and Hungary in eastern Europe; all countries except Ireland in northern Europe; all countries except the Netherlands in western Europe; and Greece and Italy in southern Europe.

TABLE VII.14

Percentages of men and women aged 60 and over, and 75 and over, and sex ratios at these ages, by country, 1970-2000, according to "most likely" variant

(Percentage of all men and of all women, and numbers of men per 100 women)

Region, country and age group	1970			1980			1990			2000		
	Men	Women	Sex ratio	Men	Women	Sex ratio	Men	Women	Sex ratio	Men	Women	Sex ratio
	Percentages			Percentages			Percentages			Percentages		
Eastern Europe												
Bulgaria												
60+	13.9	15.9	88	14.7	16.9	87	17.8	20.4	88	18.9	21.6	89
75+	2.5	3.4	72	3.4	4.5	76	4.3	5.6	78	4.9	6.3	79
Czechoslovakia												
60+	14.8	19.1	73	13.1	17.7	70	13.9	18.8	71	13.8	18.2	73
75+	2.4	4.2	54	2.9	5.0	54	3.0	5.4	54	3.0	5.2	55
German Democratic Republic												
60+	18.6	25.0	63	15.4	24.1	56	14.0	22.9	57	17.3	23.5	71
75+	3.8	6.2	53	5.1	8.2	55	4.6	9.0	47	3.4	7.7	43
Hungary												
60+	15.1	18.8	76	14.5	19.2	72	15.8	21.0	72	16.0	21.3	73
75+	2.7	4.2	60	3.4	5.4	59	3.8	6.3	58	3.5	6.0	56
Poland												
60+	10.9	14.6	71	11.1	15.4	69	13.3	17.9	72	15.7	19.9	77
75+	1.7	3.1	53	2.5	4.3	55	3.0	5.2	57	3.3	5.6	58
Romania												
60+	11.9	14.5	79	11.6	15.1	75	14.0	17.6	79	16.3	19.4	83
75+	1.9	3.0	62	2.7	3.8	68	3.3	4.9	66	3.4	5.1	65
Northern Europe												
Denmark												
60+	15.8	19.0	82	16.9	20.7	80	16.7	20.8	79	15.9	19.6	81
75+	3.6	4.9	73	4.2	6.2	66	4.6	6.9	66	4.6	6.9	66
Finland												
60+	11.6	16.6	65	12.4	18.9	61	13.4	20.3	62	14.2	20.5	65
75+	1.8	3.5	48	2.5	4.9	48	2.9	6.0	45	2.9	6.2	44
Ireland												
60+	14.6	16.5	89	14.3	16.6	86	12.8	15.5	83	11.3	13.7	83
75+	3.5	4.6	77	3.5	4.9	71	3.6	5.1	73	3.4	4.8	70

TABLE VII.14 (*continued*)

Percentages of men and women aged 60 and over, and 75 and over, and sex ratios at these ages, by country, 1970-2000, according to "most likely" variant

(*Percentage of all men and of all women, and numbers of men per 100 women*)

Region, country and age group	*1970*			*1980*			*1990*			*2000*		
	Men	*Women*	*Sex ratio*	*Men*	*Women*	*Sex ratio*	*Men*	*Women*	*Sex ratio*	*Men*	*Women*	*Sex ratio*
	Percentages			*Percentages*			*Percentages*			*Percentages*		
Norway												
60+	16.4	19.9	82	17.9	21.9	81	17.8	21.8	81	15.6	19.4	80
75+	3.9	5.5	71	4.5	6.8	66	5.1	7.4	68	5.2	7.7	68
Sweden												
60+	18.0	21.2	85	19.7	23.6	83	19.8	24.5	79	18.6	23.3	78
75+	4.1	5.7	72	5.0	7.4	66	5.8	9.0	64	5.9	9.4	62
United Kingdom												
60+	15.7	21.5	69	15.9	22.0	69	15.5	21.5	69	14.4	20.0	70
75+	3.0	6.0	47	3.4	7.0	47	3.8	7.6	48	3.6	7.4	48
Western Europe												
Austria												
60+	16.9	23.0	65	14.6	22.5	58	14.6	22.6	59	15.1	21.1	67
75+	3.3	5.9	49	3.9	7.4	48	3.7	7.7	44	3.1	7.1	41
Belgium												
60+	16.5	21.3	74	15.7	21.3	71	16.8	22.4	72	17.1	22.5	73
75+	3.5	5.6	60	4.4	7.5	56	4.5	8.0	55	4.3	7.5	55
France												
60+	14.9	21.0	68	14.1	19.4	70	16.0	20.4	77	17.0	20.3	83
75+	3.0	6.3	46	4.0	7.3	53	4.7	7.7	60	4.7	7.0	66
Germany, Federal Republic of												
60+	16.1	22.3	66	14.4	22.7	59	15.1	23.2	61	18.7	24.2	75
75+	3.1	5.4	52	3.8	7.0	50	3.8	8.0	45	3.2	7.3	42
Netherlands												
60+	13.0	15.9	82	13.1	17.2	75	13.3	18.1	72	13.7	18.2	75
75+	3.1	4.1	76	3.3	5.2	62	3.3	5.9	55	3.4	6.3	53
Switzerland												
60+	16.6	20.9	73	17.9	22.3	73	18.6	23.4	73	19.0	24.2	72
75+	3.5	5.4	59	4.7	7.3	59	5.5	8.4	60	6.0	9.0	61

Southern Europe												
Albania												
60+	6.1	7.0	89	6.1	7.0	91	6.3	7.3	89	7.6	8.5	92
75+	1.3	1.7	78	1.2	1.6	82	1.3	1.7	80	1.4	1.7	86
Greece												
60+	15.2	17.5	82	17.4	20.3	81	18.7	22.0	82	19.0	22.8	81
75+	3.2	4.5	68	4.5	6.2	69	5.7	7.6	72	5.1	7.1	70
Italy												
60+	13.9	17.5	76	14.4	18.6	74	16.3	21.0	75	17.8	22.4	77
75+	2.9	4.6	62	3.4	5.5	60	4.2	6.7	61	4.4	6.9	61
Portugal												
60+	11.8	15.3	70	11.8	15.7	69	12.0	16.9	66	11.7	17.6	63
75+	2.2	3.5	56	2.1	3.8	52	2.7	4.6	54	2.7	4.8	53
Spain												
60+	12.4	15.9	75	12.8	16.8	73	14.0	17.8	77	13.8	17.5	77
75+	2.5	4.0	60	3.0	4.8	61	3.2	5.1	60	3.4	5.3	63
Yugoslavia												
60+	10.9	13.1	80	10.0	13.1	74	11.9	15.8	74	14.6	18.1	80
75+	1.7	2.7	62	2.3	3.4	66	2.6	4.0	64	2.4	4.1	60
USSR												
60+	8.4	15.0	48	8.8	16.8	46	11.3	19.1	54	14.2	20.4	66
75+	1.6	3.3	41	2.0	4.8	37	2.6	6.2	38	2.5	6.0	40

TABLE VII.15

Changes in the number of men and women aged 60 and over, by country, 1970-2000, according to "most likely" variant

(Index numbers, 1970 = 100) [a]

Region and country	*Men* 1980	*Men* 1990	*Men* 2000	*Women* 1980	*Women* 1990	*Women* 2000
Eastern Europe						
Bulgaria	112	141	154	113	141	153
Czechoslovakia	92	101	104	97	105	105
German Democratic Republic	86	82	106	96	92	95
Hungary	99	110	113	105	115	117
Poland	111	142	173	114	139	159
Romania	107	140	175	113	141	167
Northern Europe						
Denmark	112	114	112	114	118	115
Finland	109	119	123	117	125	124
Ireland	109	111	111	113	119	119
Norway	115	119	108	116	120	110
Sweden	113	114	108	116	122	116
United Kingdom	106	109	107	106	109	105
Western Europe						
Austria	87	88	93	97	96	89
Belgium	97	105	107	102	108	109
France	102	123	137	98	108	112
Germany, Federal Republic of	90	94	115	101	101	101
Netherlands	109	119	130	118	134	142
Switzerland	112	120	124	111	120	126
Southern Europe						
Albania	131	172	245	129	172	237
Greece	118	135	145	119	135	146
Italy	110	130	148	113	132	146
Portugal	110	122	128	110	128	142
Spain	115	139	150	116	136	145
Yugoslavia	101	131	172	109	141	171
USSR	119	171	236	122	151	172

[a] For actual numbers in base year 1970, see appendix table A.VII.1.

initial years of the steep fall in birth rates between 1956 and 1965. In marked contrast to these cases is the major shift downwards in dependency ratios in the German Democratic Republic as a result both of recent major changes in age composition associated with migration and the assumption of low fertility in the future.

The most striking feature of table VII.17 is, however, the major reduction in dependency ratios which follows the application of the most likely variants in northern and western Europe. This reflects both the relatively low fertility in the countries concerned, Ireland excepted, their longevity, the fact that the relatively large cohorts born in the baby boom of the 1950s to early 1960s begin to move into the population of working age, and the assumption for most of these countries that fertility will remain low for the remainder of the century. Thus, while the ageing process is apparent in terms of the increasing numbers, and in many cases in the proportions, of old people in their populations, this does not mean that the total burden of dependency is going to increase. On the contrary, there will be a marked increase over all northern and western countries in the proportion of national populations of working age. This is the demographic pattern of the dependency burden, which is not necessarily the same as the economic and social pattern, for which the shift in emphasis from young to old has major implications. However, these economic and social aspects are not within the terms of reference of this study.

Southern Europe still tends to reflect the impact of high fertility levels in recent years, and to some degree lower past levels of expectations of life. If their fertility and mortality patterns follow the courses assumed in their most likely variants, the countries of this region will begin to show a marked decrease in their dependency ratios early in the twenty-first century.

TABLE VII.16

Changes in the number of men and women aged 75 and over, by country, 1970-2000, according to "most likely" variant

(*Index numbers, 1970 = 100*) [a]

Region and country	*Men*			*Women*		
	1980	*1990*	*2000*	*1980*	*1990*	*2000*
Eastern Europe						
Bulgaria	147	194	228	139	179	206
Czechoslovakia	124	136	137	123	136	135
German Democratic Republic	136	130	101	132	145	125
Hungary	130	150	138	130	154	146
Poland	157	204	234	151	192	216
Romania	151	200	222	138	188	212
Northern Europe						
Denmark	120	139	141	133	153	156
Finland	143	165	163	143	176	178
Ireland	112	133	138	121	140	151
Norway	121	141	150	130	148	158
Sweden	124	147	149	135	165	174
United Kingdom	121	141	143	120	137	139
Western Europe						
Austria	121	116	97	123	128	116
Belgium	126	133	127	135	145	137
France	144	181	187	123	137	130
Germany, Federal Republic of	125	124	104	130	144	128
Netherlands	114	125	134	138	170	188
Switzerland	140	170	186	140	168	181
Southern Europe						
Albania	129	171	221	122	167	200
Greece	143	193	185	142	183	180
Italy	122	159	171	127	161	172
Portugal	106	146	157	114	151	167
Spain	134	156	183	132	155	174
Yugoslavia	147	178	181	138	171	187
USSR	143	203	220	159	221	230

[a] For actual numbers in base year, 1970, see appendix table A.VII.1.

Throughout the analysis so far reference was made to the manner in which sex ratios have both determined demographic events or have been determined by them. Thus a low proportion of males, for example, as a result of deaths through war, could be expected to reduce total fertility rates because it would tend to increase the proportion of women who could not marry or were widowed. Conversely, immigration which normally carried an excess of males, could be expected to increase the proportion of women who could marry and in this way raise total fertility. Again, an excess of women amongst aged people is the sociological expectation of mortality differentials.

The considerable disruption during the past 40 years or so of the smooth operation of normal sex ratios from birth to each higher age has been stressed in this chapter, and also in chapter II (see, in particular, table II.6). By the beginning of the projection period, 1970, the situation of most European countries was that the normal life-table mortality had been the main determinant of the sex ratios of European populations up to age 44, but that above this age the effects of man-made disturbances were still readily detectable. Thus at age 0-14 the regional variation of males per 100 females was only between 105 and 104. At ages 15-44 the variation was still relatively small, between 105 and 97, with the highest ratio in western Europe and the lowest ratio in the USSR. The regional and country variations over these ages would be explained largely by differences in mortality schedules applying for different expectations of life, and to some degree by migratory movements which tended to be male-dominant.

Given the universally high expectation of life now prevailing, and expected to prevail in Europe and the USSR, the uniform sex ratios of around 105 male per 100 female births would yield about equal numbers of men and

TABLE VII.17

Dependency ratios by region and country, 1970-2000, according to "most likely" variant

(Population aged less than 15 and 60 and over per 100 population aged 15-59)

Region and country	*1970*	*1975*	*1980*	*1985*	*1990*	*1995*	*2000*
Europe[a]	71	70	66	66	66	68	67
Eastern Europe	67	65	62	63	64	64	64
Bulgaria	60	62	61	65	67	69	69
Czechoslovakia	67	66	62	64	63	61	59
German Democratic Republic	83	80	69	67	66	66	69
Hungary	62	62	62	65	66	64	63
Poland	66	60	57	59	60	60	59
Romania	64	65	65	64	66	69	72
Northern Europe	74	75	73	72	72	69	67
Denmark	69	70	69	67	67	66	65
Finland	63	60	55	54	54	53	51
Ireland	88	87	88	88	86	82	76
Norway	74	75	75	74	72	69	65
Sweden	68	72	73	74	72	69	68
United Kingdom	75	76	74	73	73	70	68
Western Europe	74	73	65	63	65	65	65
Austria	81	78	66	63	63	62	62
Belgium	74	72	64	64	66	67	66
France	75	75	68	69	70	69	67
Germany, Federal Republic of	74	72	61	57	59	61	65
Netherlands	72	69	66	65	66	63	61
Switzerland	72	70	67	67	68	67	65
Southern Europe	69	70	66	66	68	70	70
Albania	96	90	84	81	77	71	64
Greece	70	74	72	69	73	77	77
Italy	67	70	65	65	67	68	70
Portugal	72	71	66	65	65	65	64
Spain	73	72	70	72	74	75	72
Yugoslavia	65	62	57	58	61	64	65
USSR	68	64	60	63	70	71	72

[a] Excluding the USSR.

women around age 50.[24] The very low actual ratios compared with this norm in 1970 in eastern and western Europe, and especially in the USSR, reveal the depredations of the Second World War. The USSR continues to be particularly disadvantaged in this regard in the higher ages as well. At ages 45-59 the sex ratios varied around 1970 from 95 in northern Europe to 86 in western Europe and down to as low as 60 in the USSR. At ages 60-74 the ratios of the four regions of Europe varied only between 81 and 75, but the ratio in the USSR was only 50 males per 100 females (table II.6).

As the only mortality allowed for in the projections is that of deaths according to the most likely life-tables, age-sex structures of the future populations are assumed to conform increasingly with those life-table patterns. Furthermore, the relatively smooth age structure now apparent below age 44 mean that there are unlikely to be major disturbances to fertility schedules from this factor for a considerable time ahead, unless new man-made disasters intervene again. On the other hand, the echo effect of the baby boom of the 1950s is now beginning to swell the numbers of young people entering the childbearing years and this age disturbance may be one factor in the rising birth rates already experienced in Czechoslovakia, Hungary and Poland, and may yet lead to some temporary increases in other countries as well, without any change in real marital fertility.[25]

Thus the sex ratios for 1970 shown in table II.6 (and in detail in appendix table A.II.1) mean that progressively from around age 44 years in 1970 up to age 74 years in the year 2000 the composition of the projected population will reflect primarily life-table mortality differentials at each age. This gives a near balance of the sexes around age 50 years in most countries, followed by a tendency for the sex ratio to fall consistently thereafter as age increases (table VII.14). This trend will also apply to the theoretical projections presented in section D below.

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[24] See chapter II.

[25] See chapter V.

The changes over time discussed in the present section will not, of course, cease in the year 2000. This is merely the end of the projection period used for the most likely variants. Going beyond a period of about thirty years increases the uncertainties in a projection exercise. Yet events occurring now must have their impact on future demographic profiles until well into the twenty-first century. It is therefore, appropriate to consider a theoretical model of what would be the longer term results for the major regions of Europe and the USSR of the achievement and continuation of a level of fertility marginally below replacement level (GRR = 1.000) and secondly of one that would take fertility well below that level (GRR = 0.750).

D. Size and age structure on the assumption of rapid fertility decline, 1970-2030: a theoretical analysis for the main regions of Europe

1. *Assumptions*

In section C of this chapter it was pointed out that the most likely variants after about 1975 were around or below GRR = 1.000 in approximately half of the countries of Europe, and that in most countries the current picture is one of declining fertilities. As pointed out in chapter V, there has been a slight upturn again after rapid and substantial decline of the birth rates in some east European countries, but whether or not this presages increases in family size in the future is a question that cannot be answered with certainty at this stage. However, one factor involved is almost certainly the echo effect of the past baby boom. If the declines continue down to replacement level or below replacement level fertility, they will of course not do so simultaneously in every country. Nor is there any assurance that the ratio will suddenly cease changing to remain constantly around a given level. Three countries (Finland, the Federal Republic of Germany and Switzerland) have offered most likely variants which assume that the decline will proceed far below replacement level, with a range of GRRs between 0.730 and 0.838 as the century advances.

The exercise in the present section will consist in selecting two theoretical propositions to illustrate what the effect would be in the main regions of Europe:

(*a*) if the fall in fertility should stabilize by 1976 at GRR = 1.000 (variant I); and

(*b*) if the fall in fertility should continue in all regions to GRR = 0.750 by 1986, again remaining constant thereafter (variant II).

This theoretical approach will be restricted to the four major regions and the USSR.

The second assumption may seem extreme in the light of present trends in Europe, but the first assumption is certainly well within possibilities as an average, although fluctuations around such an average would be bound to occur. Reality may well fall somewhere between the levels chosen for this theoretical exercise. The evidence from northern and western Europe at least does not indicate an average level far, if at all, above the maximum theoretical assumption, and there is no evidence so far to suggest that sub-replacement patterns will go below the theoretical minimum assumptions.

As regards mortality trends for this theoretical exercise, the regional life-tables used were selected by the Population Division of the United Nations Secretariat taking into account the average expectations of life at birth selected for the most likely variant of each country. The highest expected value of the average expectation of life at birth in this theoretical variant is 72.3 years for men 77.5 for women. It is assumed that these maximum levels will be reached in the following periods:

Region	*Period* *Men*	 *Women*
Northern Europe	1975-1980	1985-1990
Western Europe	2005-2010	2000-2005
Eastern Europe	2015-2020	2010-2015
USSR	2020-2025	2010-2015
Southern Europe	2025-2030	2025-2030

After reaching these maximum levels mortality is assumed to remain constant.

The following expectation of life at birth figures illustrate the relationship between the most likely variants chosen by the individual countries and the theoretical variants assumed to apply by 1995-2000.

Region	*Country projections range*	*Theoretical variants chosen for each region*
Men		
Eastern Europe	66.0-72.0	71.5
Northern Europe	66.8-72.3	72.3
Western Europe	66.6-73.2	72.2
Southern Europe	65.6-70.3	70.8
USSR	69.5	71.2
Women		
Eastern Europe	72.1-77.5	77.0
Northern Europe	74.5-78.2	77.5
Western Europe	73.5-78.9	77.4
Southern Europe	72.0-77.0	75.8
USSR	76.5	77.0

These mortality levels may again seem modest, and they are lower than the future possibilities suggested by WHO,[26] but any improvements that seem likely to occur will have relatively slight effects upon the structures of the model populations discussed below: more significant will be the difference between the two fertility variants chosen.

Tables VII.18 and VII.19 set out the mortality schedules applied in all cases and the GRRs applied in each of the two theoretical variants. Table VII.20 then lists the ASFRs appropriate to each level of GRR. These

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[26] See foot-note 5 of this chapter.

TABLE VII.18

Average expectation of life at birth of men and women, by region, 1970-2030, according to "theoretical" variants I and II

Sex and period	*Eastern Europe*	*Northern Europe*	*Western Europe*	*Southern Europe*	*USSR*
Men					
1970-1975	67.0	72.0	70.0	65.0	66.0
1995-2000	71.5	72.3	72.2	70.8	71.2
2025-2030	72.3	72.3	72.3	72.3	72.3
Women					
1970-1975	74.0	77.0	76.0	70.0	74.0
1995-2000	77.0	77.5	77.4	75.8	77.0
2025-2030	77.5	77.5	77.5	77.5	77.5

TABLE VII.19

GRRs, by region, 1970-2030, according to "theoretical" variants I and II

Variant and period	*Eastern Europe*	*Northern Europe*	*Western Europe*	*Southern Europe*	*USSR*
Variant I					
1970-1975	1.080	1.100	1.020	1.220	1.200
1975-2030	1.000	1.000	1.000	1.000	1.000
Variant II					
1970-1975	1.080	1.100	1.020	1.220	1.200
1975-1980	0.850	0.850	0.850	1.050	0.850
1980-1985	0.800	0.800	0.800	0.850	0.800
1985-2030	0.750	0.750	0.750	0.750	0.750

assume that age-specific fertility will continue to be concentrated heavily in the 20-29 age-groups, and that, as the higher fertility schedules decline to the minimum level of GRR = 1.000 under variant I, the pattern of southern Europe will broadly conform to that of the other regions. But under variant II, which assumes an approach to GRR = 0.750, fertility schedules are reduced over all ages.

2. *Implications in terms of population totals*

The levels of growth under the two variants are given in table VII.21. Under variant I, of a constant gross reproduction rate of 1.000 after 1975, the birth rate for Europe as a whole would move slowly downwards and the death rate would move slowly upwards, until a near stationary pattern is reached around 2025-2030, with birth and death rates around 13 per 1,000 of population. The steepest declines in growth would occur in eastern and southern Europe and in the USSR because of their higher initial birth rates. However, the age structures of these regions were such in 1970 that they will have the strongest impetus to growth beyond the turn of the century. In western and northern Europe birth rates would already be close to the stationary level by the year 2000, and with death rates already above 11 per 1,000, growth rates would be down to under 3, or well below half the 1970 levels. By contrast, eastern and southern Europe would still show growth rates above 4, and the USSR above 5 per 1,000. These differences would have largely disappeared for the four regions of Europe by about 2010-2015, when all their growth rates would be between 1.4 and 1.8, but the USSR would still be considerably above these, at 2.8 per 1,000. By the end of the projection period, however, all regions would be near the turning point between slow growth and slow decline.

Under variant II, growth would of course be reduced to very low levels much more quickly. By 1985-1990 the birth rates of all regions would be between 11.4 (northern Europe) and 12.5 (USSR) and the turning point between growth and decline would have been reached in northern and western Europe. By 1995-2000 the same point would be reached in eastern and southern Europe, with the USSR following by 2000-2005. By 2005-2010 all regions would be in decline. By the end of the projection period all the regions of Europe and the USSR would be registering declines at rates per 1,000 of population ranging between —6.3 and —7.9, and birth rates around 8.4 would be little more than half the death rates of between 15.0 and 16.3.

The total populations that would emerge from the growth patterns of these two theoretical variants are given in table VII.22. Under variant I considerable growth would continue to occur until past the turn of

FIGURE 20

GRRs reproduction by region, 1970-2030, according to "theoretical" variants I and II

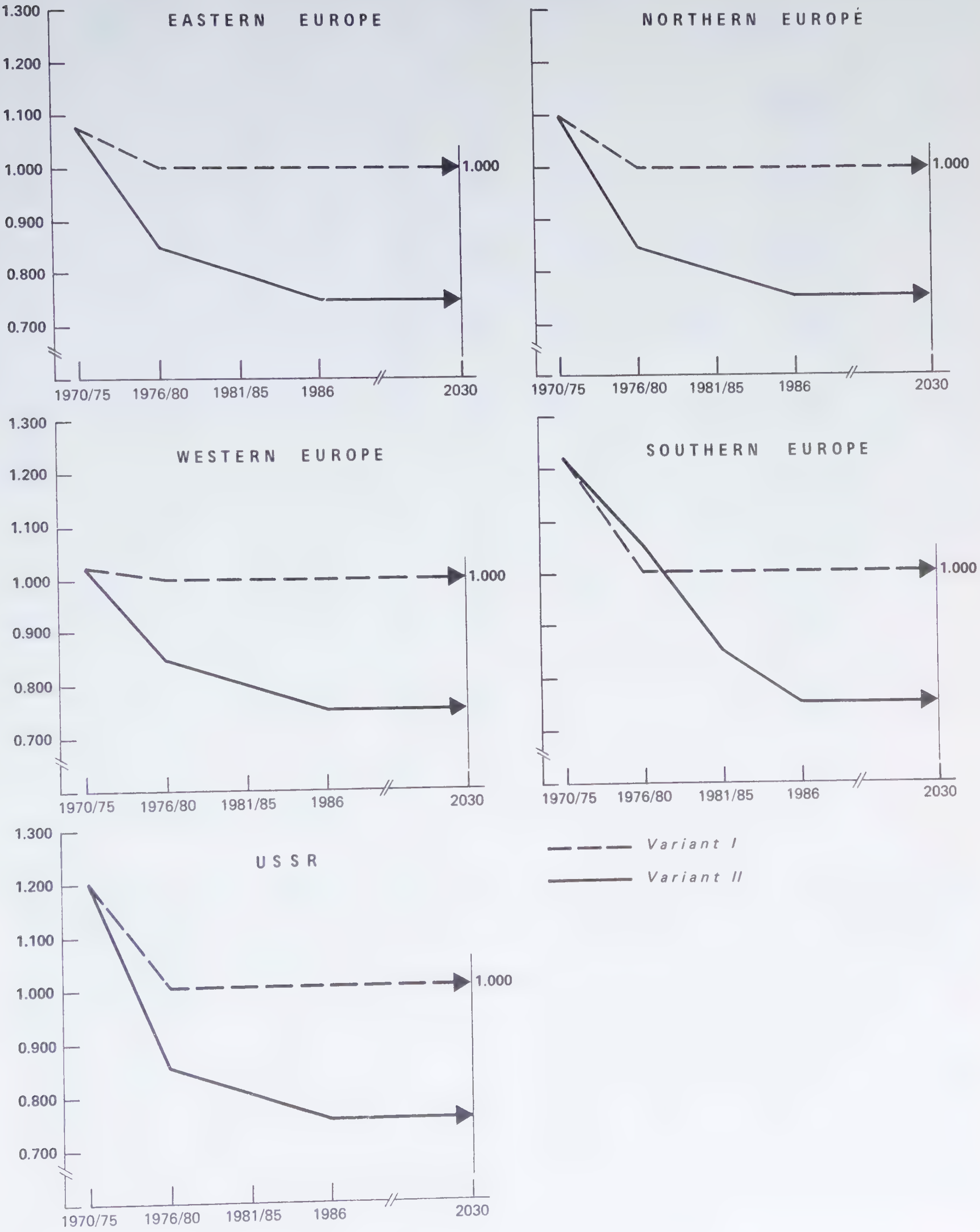


TABLE VII.20

ASFRs, by region, 1970-1975 and 1985-2030, according to "theoretical" variants I and II

(Births per 100 women in the given age group)

Variant, region and period	*15-19*	*20-24*	*25-29*	*30-34*	*35-39*	*40-44*	*45-49*
Variant I							
Eastern Europe							
1970-1975	46	175	122	64	30	8	1
1975-2030	40	155	120	60	30	7	1
Northern Europe							
1970-1975	45	147	144	76	32	8	–
1975-2030	40	140	135	61	30	7	–
Western Europe							
1970-1975	36	139	128	72	34	9	1
1975-2030	36	136	125	72	34	9	1
Southern Europe							
1970-1975	36	126	149	107	59	22	4
1975-2030	36	126	135	64	40	10	2
USSR							
1970-1975	32	174	137	84	49	15	2
1975-2030	32	150	120	60	40	10	1
Variant II							
Eastern Europe							
1970-1975	46	175	122	64	30	8	1
1985-2030	25	130	100	40	9	5	–
Northern Europe							
1970-1975	45	147	144	76	32	8	–
1985-2030	25	120	105	40	14	5	–
Western Europe							
1970-1975	36	139	128	72	34	8	1
1985-2030	25	115	105	44	15	5	–
Southern Europe							
1970-1975	36	126	149	107	59	22	4
1985-2030	25	100	120	45	14	5	–
USSR							
1970-1975	32	174	137	84	49	15	2
1985-2030	25	120	100	38	20	5	1

the century, that is until the impetus of growth inherent in present regional age structures finally disappears with the emergence of an age composition approximating to a stable and stationary model. Only southern and eastern Europe and the USSR show any growth after the year 2000, and there too the stationary situation has almost been reached.

It is of interest to compare the results of the application of theoretical variant I (GRR = 1.000 from 1975 in all regions) by the year 2000 with the earlier results achieved by applying the most likely variants of individual countries (table VII.8). For Europe as a whole, the difference in total populations by the year 2000 is very slight. The theoretical variant naturally produces the largest reduction, when compared with the most likely variant, in the region with the highest fertility at the start, i.e., southern Europe. The theoretical variant also reduces the population of the USSR to a figure considerably below that produced by the most likely variant. But in the case of western Europe the theoretical variant adds considerably to the expected regional populations. There is little change in the cases of eastern and northern Europe. The total population (in millions) by regions under the most likely variant and theoretical variant I at the year 2000 and the index of growth (1970 = 100), are:

	Numbers		*Index, 1970 = 100*	
	Most likely variant	*Theoretical variant I*	*Most likely variant*	*Theoretical variant I*
Europe	525	524	116	114
Eastern Europe	119	120	115	117
Northern Europe	91	90	114	112
Western Europe	157	164	107	111
Southern Europe	158	150	124	117
USSR	321	304	132	125

TABLE VII.21

Birth rates, death rates and rates of natural increase, by region, 1970-1975, 1995-2000, 2025-2030, according to "theoretical" variants I and II

(Average annual rates per 1,000 population)

	Variant I						Variant II					
Rates periods	*Europe* [a]	*Eastern Europe*	*Northern Europe*	*Western Europe*	*Southern Europe*	*USSR*	*Europe* [a]	*Eastern Europe*	*Northern Europe*	*Western Europe*	*Southern Europe*	*USSR*
Birth rates												
1970-1975	16.1	16.8	15.5	14.3	17.8	18.2	16.1	16.8	15.5	14.3	17.8	18.2
1995-2000	14.1	14.1	14.0	13.9	14.3	14.6	10.9	10.9	10.8	10.6	11.3	11.3
2025-2030	13.0	13.1	13.0	13.1	12.7	13.2	8.4	8.4	8.4	8.5	8.4	8.7
Death rates												
1970-1975	10.2	10.0	9.4	10.7	10.3	8.3	10.2	10.0	9.4	10.7	10.3	8.3
1995-2000	10.7	10.1	11.7	11.0	10.2	9.2	11.2	10.8	12.5	11.6	10.5	9.7
2025-2030	12.9	12.9	13.0	13.0	12.6	12.2	15.9	16.3	16.3	16.4	15.1	15.0
Natural increase rates												
1970-1975	5.9	6.8	6.1	3.6	7.5	9.9	5.9	6.8	6.1	3.6	7.5	9.9
1995-2000	3.4	4.0	2.3	2.9	4.1	5.4	−0.3	0.1	−1.7	−1.0	0.8	1.6
2025-2030	0.1	0.2	0.0	0.1	0.1	1.0	−7.5	−7.9	−7.9	−7.9	−6.7	−6.3

[a] Excluding the USSR.

TABLE VII.22

Total population size and growth, by region, 1970-2030, according to "theoretical" variants I and II

	Population size (thousands)							Population growth (Index numbers, 1970 = 100)					
Variant and region	*1970*	*1980*	*1990*	*2000*	*2010*	*2020*	*2030*	*1980*	*1990*	*2000*	*2010*	*2020*	*2030*
Variant I													
Europe[a]	459 028	483 482	505 011	523 833	535 372	543 096	545 548	105	110	114	117	118	119
Eastern Europe	102 942	109 661	115 252	120 103	123 412	125 366	126 019	107	112	117	120	122	122
Northern Europe	80 310	84 521	87 479	89 717	91 367	92 895	93 267	105	109	112	114	116	116
Western Europe	140 080	153 406	159 015	164 059	167 037	169 045	169 685	104	107	111	113	114	115
Southern Europe	127 696	135 894	143 265	149 953	153 556	155 790	156 577	106	112	117	120	122	123
USSR	242 768	265 404	286 817	304 051	315 322	323 064	327 946	109	118	125	130	133	135
Variant II													
Europe[a]	459 028	480 155	486 114	486 010	473 640	452 036	422 282	105	106	106	103	99	92
Eastern Europe	102 942	108 446	110 296	110 671	108 076	103 018	95 963	105	107	108	105	100	93
Northern Europe	80 310	83 649	83 845	82 780	80 164	76 611	71 413	104	104	103	100	95	89
Western Europe	148 080	151 811	152 379	151 359	146 523	139 129	129 405	103	103	102	99	94	87
Southern Europe	127 696	136 249	139 594	141 200	138 877	133 278	125 501	107	109	111	109	105	98
USSR	242 768	264 347	277 094	282 951	280 402	270 439	255 814	109	114	117	116	111	105

[a] Excluding the USSR.

Thus for Europe excluding the USSR, and for the eastern and northern regions, the most likely variants applied in section C of this chapter yield a result by the end of the century which is about the equivalent of a constant average fertility level from 1975 just below replacement level, that is theoretical variant I; but assuming that the most likely variant does prove to be realistic, western Europe's growth will be considerably below, and eastern Europe's growth and the growth of the USSR will be considerably above that equivalent.

Should fertility follow the path of theoretical variant II, moving down to the level of a gross reproduction rate of 0.750 in 1985, a maximum population would be reached around the year 1990 in Europe and around the year 2000 in the USSR. Thereafter, as table VII.22 shows, the decline would be quite steep, with the population of Europe falling below the 1970 level by about 2020. Only southern Europe and the USSR would be above that level. By 2030 only the USSR would remain above that level, but there too decline below the 1970 figure would be imminent. By that stage, the populations of northern and western Europe would already be below 90 per cent of their 1970 levels and would be declining rapidly.

3. *Implications in terms of population structures*

Theoretical variant I would bring all regions virtually to their stable age structures early in the twenty-first century, with about 19 per cent of population aged 0-14, 58 per cent aged 15-59, and 23 per cent aged 60 years and over. The proportions of populations aged 0-14 would decline consistently in all regions, from starting points in 1970 between 24.2 and 28.6 per cent to end points in 2030 between 18.5 and 19.6 per cent (table VII.23).

At the other end of the life cycle, as table VII.23 also shows, the proportions aged 60 and over would rise consistently in all regions, from starting points between 12.0 and 18.3 per cent, to end points between 22.7 and 25.6 per cent. By about 1990 the factors out of past history which had distorted age structures would be largely spent forces: the influence of the declining births of the 1930s would still be felt, but the disturbances created by war and its aftermath would no longer be significant. Consequently, as no projection variant attempted to predict the future man-made disturbances of this kind, the ageing process is accelerated from about 1990 onwards and is conditioned wholly by assumed fertility and mortality trends.

As regards the population of working age (15-59 years), there is little shift in the percentage of population in this age group until the ageing process begins to accelerate; then, during the early years of the twenty-first century, the trend in all regions is markedly downwards. Should fertility continue to remain slightly below replacement level, this trend towards higher dependency ratios would be continued beyond the year 2000.

The application of variant II accelerates and accentuates the trends discussed above. As the growth of population slows down and a declining situation takes its place, the proportions aged 0-14 are further reduced, from around 19 per cent in a near-stationary situation to around 13 per cent at the end of the projection period. Conversely, the age group (60 years and over) rises sharply from a stationary proportion around 23 per cent to 30 per cent and more. As a consequence, the proportions aged 15-59 years are further reduced. Furthermore, within the population of working age there would be a shift in the proportions aged 15-44 (decreasing) and those aged 45-59 (increasing). This tendency is apparent in all regions under variant I, and is particularly marked under variant II. In other words, the work force shows a marked ageing trend, compared with its present structure.

Under the most likely variants there was a decrease in the absolute numbers of young persons of compulsory school age (5-14 years) up to the year 2000 in all regions except in southern Europe. An increase also applied in the USSR. Under theoretical variant I a decrease would apply in all regions and the USSR by 1980 and the numbers would not recover to the 1970 level thereafter. Under theoretical variant II the decrease would, of course, be much greater. By the year 2000 young persons would be less than 75 per cent of the 1970 levels, and by 2030 they would be only about half those levels. Table VII.24 sets out the pattern of change by decades.

Much the same situation would apply to the 15-19 years age group. The numbers in this group also showed a declining tendency in many countries of eastern, northern and western Europe under the most likely variant, but a clear increase in all countries but Italy in southern Europe, and also a clear increase in the USSR. An early approach to replacement level as implied in theoretical variant I would produce a decline by the year 2000 in this age group in Europe as a whole and in the USSR. Slight increases would occur in western and northern Europe, and by 2030 these regions would still be marginally above the 1970 level, whereas all other regions would be below this level. Under theoretical variant II the decline of the 15-19 age group would be to 15 per cent and more below 1970 levels by the year 2000, and again to less than two-thirds of that level 30 years later (table VII.25).

It was pointed out earlier that under theoretical variant I those aged 15-59 would decline as a proportion of total populations in the latter part of the projection period. However, they would still be increasing numerically for some time after 1970. For Europe as a whole, their maximum numbers would be reached around 2010, some 19 per cent above their 1970 levels. This peak would be attained at the same time in each region, and while some decline would occur thereafter, all would be between 14 and 18 per cent above 1970 figures by the end of the projection period, the year 2030. A similar pattern would apply in the USSR, with a maximum around 2010 about 35 per cent above the 1970 figure, and ending the period in the year 2030 still 31 per cent above that level.

Under variant II, the numbers of those aged 15-59 would be declining in all four regions of Europe from peaks in 1990 which would be 14 to 17 per cent above 1970 levels, but by the year 2030 they would all be well below the 1970 figures. The USSR, from a maximum

TABLE VII.23

Relative distributions of population by broad age groups, by region, 1970-2030, according to "theoretical" variants I and II

(*Percentages*)

Region and age group	*Variant I*						
	1970	*1980*	*1990*	*2000*	*2010*	*2020*	*2030*
Europe[a]							
0-14	24.9	22.3	21.1	20.7	19.7	19.3	19.1
15-59	58.4	60.6	60.4	59.6	59.6	58.2	56.9
15-44	41.9	42.8	43.2	41.3	39.8	38.7	38.6
45-59	16.5	17.8	17.2	18.3	19.8	19.5	18.3
60+	16.7	17.1	18.5	19.7	20.7	22.5	24.0
60-74	12.9	12.3	12.9	14.0	14.4	16.0	16.6
75+	3.8	4.8	5.6	5.7	6.3	6.5	7.4
Eastern Europe							
0-14	24.6	22.8	21.8	20.6	20.0	19.6	19.3
15-59	59.8	61.7	61.0	60.5	60.2	57.8	57.8
15-44	43.5	43.7	43.8	41.5	40.0	39.3	38.8
45-59	16.3	18.0	17.2	19.0	20.2	18.5	19.0
60+	15.6	15.5	17.2	18.9	19.8	22.6	22.9
60-74	12.5	11.3	12.2	13.9	13.9	16.7	15.7
75+	3.1	4.2	5.0	5.0	5.9	5.9	7.2
Northern Europe							
0-14	24.2	21.9	20.8	20.7	19.8	19.4	19.3
15-59	57.5	57.7	58.4	59.5	58.9	58.0	56.6
15-44	39.4	41.3	42.4	41.0	39.8	38.6	38.5
45-59	18.1	16.4	16.0	18.5	19.1	19.4	18.1
60+	18.3	20.4	20.8	19.8	21.3	22.6	24.1
60-74	13.8	14.5	13.9	12.7	14.7	15.7	16.4
75+	4.5	5.9	6.9	7.1	6.6	6.9	7.7
Western Europe							
0-14	24.2	21.6	21.1	20.7	19.8	19.7	19.5
15-59	57.5	60.6	60.1	59.4	59.5	58.5	57.2
15-44	41.3	42.7	42.3	41.1	39.8	39.1	39.1
45-59	16.2	17.9	17.8	18.3	19.7	19.4	18.1
60+	18.3	17.8	18.8	19.9	20.7	21.8	23.3
60-74	14.0	12.4	12.9	14.2	14.6	15.4	16.5
75+	4.3	5.4	5.9	5.7	6.1	6.4	6.8
Southern Europe							
0-14	26.4	23.1	20.6	20.6	19.2	18.7	18.5
15-59	59.1	61.4	61.4	59.4	59.7	58.2	55.9
15-44	43.0	43.2	44.1	41.6	39.8	37.9	37.8
45-59	16.1	18.2	17.3	17.8	19.9	20.3	18.1
60+	14.5	15.5	18.0	20.0	21.1	23.1	25.6
60-74	11.2	11.5	13.0	14.4	14.4	16.2	17.7
75+	3.3	4.0	5.0	5.6	6.7	6.9	7.9
USSR							
0-14	28.6	23.6	22.6	21.6	20.4	20.0	19.6
15-59	59.4	63.6	61.7	59.8	61.5	58.8	57.7
15-44	45.5	46.1	45.2	43.3	40.3	39.6	39.2
45-59	13.9	17.5	16.5	16.5	21.2	19.2	18.5
60+	12.0	12.8	15.7	18.6	18.1	21.2	22.7
60-74	9.5	9.7	11.7	14.5	12.7	15.9	16.3
75+	2.5	3.1	4.0	4.1	5.4	5.3	6.4

TABLE VII.23 (*continued*)

Region and age group	*Variant II*						
	1970	*1980*	*1990*	*2000*	*2010*	*2020*	*2030*
Europe[a]							
0-14	24.9	21.8	18.0	16.5	15.1	13.8	13.3
15-59	58.4	61.0	62.7	62.3	61.5	59.2	55.7
15-44	41.9	43.1	44.9	42.5	39.2	35.8	34.3
45-59	16.5	17.9	17.8	19.8	22.3	23.4	21.4
60+	16.7	17.2	19.3	21.2	23.4	27.0	31.0
60-74	12.9	12.3	13.5	15.0	16.3	19.2	21.5
75+	3.8	4.9	5.8	6.2	7.1	7.8	9.5
Eastern Europe							
0-14	24.7	21.9	18.2	16.4	15.2	13.8	13.4
15-59	59.7	62.4	63.7	63.1	62.2	58.7	56.5
15-44	43.5	44.2	45.8	42.5	39.2	36.0	34.4
45-59	16.2	18.2	17.9	20.6	23.0	22.7	22.1
60+	15.6	15.7	18.1	20.5	22.6	27.4	30.1
60-74	12.4	11.4	12.9	14.0	14.9	20.2	20.6
75+	3.2	4.3	5.2	6.5	7.7	7.2	9.5
Northern Europe							
0-14	24.2	21.1	17.4	16.6	15.0	13.8	13.4
15-59	57.5	58.3	60.9	62.0	60.8	58.8	55.1
15-44	39.4	41.7	44.3	42.0	39.0	35.3	34.2
45-59	18.1	16.6	16.6	20.0	21.8	23.5	20.9
60+	18.3	20.6	21.7	21.4	24.2	27.4	31.5
60-74	13.8	14.7	14.5	13.7	16.7	19.1	21.5
75+	4.5	5.9	7.2	7.7	7.5	8.3	10.0
Western Europe							
0-14	24.2	20.7	17.7	16.6	15.0	14.1	13.6
15-59	57.5	61.2	62.7	61.8	61.4	59.4	55.8
15-44	41.3	43.1	44.1	42.0	38.9	35.9	34.9
45-59	16.2	18.1	18.6	19.8	22.5	23.5	20.9
60+	18.3	18.1	19.6	21.6	23.6	26.5	30.6
60-74	14.0	12.6	13.4	15.4	16.7	18.8	21.6
75+	4.3	5.5	6.2	6.2	6.9	7.7	9.0
Southern Europe							
0-14	26.4	23.2	18.5	16.4	15.1	13.5	12.9
15-59	59.1	61.3	63.0	62.4	61.6	59.5	55.2
15-44	43.0	43.1	45.2	43.4	39.5	35.8	35.5
45-59	16.1	18.2	17.8	19.0	22.1	23.7	21.7
60+	14.5	15.5	18.5	21.2	23.3	27.0	31.9
60-74	11.2	11.5	13.3	15.3	15.8	18.9	22.1
75+	3.3	4.0	5.2	5.9	7.5	8.1	9.8
USSR							
0-14	28.6	23.3	19.9	17.2	15.9	14.5	13.7
15-59	59.4	63.8	63.9	62.8	63.8	60.2	57.1
15-44	45.5	46.3	46.8	45.0	39.9	37.2	35.0
45-59	13.9	17.5	17.1	17.8	23.9	23.0	22.1
60+	12.0	12.9	16.2	20.0	26.3	25.5	29.2
60-74	9.5	9.7	12.0	15.6	14.2	19.0	20.9
75+	2.5	3.2	4.2	4.4	6.1	6.3	8.3

[a] Excluding the USSR.

TABLE VII.24

Changes in population aged 5-14, by region, 1970-2030, according to "theoretical" variants I and II

(Index numbers, 1970 = 100)

Region	Numbers in 1970 (thousands)	Variant I						Variant II					
		1980	1990	2000	2010	2020	2030	1980	1990	2000	2010	2020	2030
Europe[a]	76 188	97	92	95	92	92	92	97	79	71	65	56	51
Eastern Europe	17 129	97	98	96	96	96	95	97	81	72	66	57	51
Northern Europe . . .	12 896	98	93	97	94	93	93	98	76	72	65	56	51
Western Europe	22 259	93	92	96	92	93	93	93	76	72	63	56	51
Southern Europe . . .	23 904	99	86	93	89	87	87	99	81	70	65	55	50
USSR	49 071	86	87	90	87	88	87	86	78	67	62	55	49

[a] Excluding the USSR.

TABLE VII.25

Changes in population aged 15-19, by region, 1970-2030, according to "theoretical" variants I and II

(Index numbers, 1970 = 100)

Region	Numbers in 1970 (thousands)	Variants I and II		Variant I				Variant II			
		1980	1990	2000	2010	2020	2030	2000	2010	2020	2030
Europe[a]	34 409	105	98	97	99	96	96	80	74	65	57
Eastern Europe	9 429	84	89	89	87	87	87	72	64	58	50
Northern Europe	5 830	114	106	104	107	102	103	83	79	68	60
Western Europe	10 167	113	95	102	104	99	101	82	77	66	59
Southern Europe	10 983	112	104	97	102	95	95	82	77	69	58
USSR	22 466	106	97	98	97	94	96	84	72	66	58

[a] Excluding the USSR.

TABLE VII.26

Changes in population aged 15-59, by region, 1970-2030, according to "theoretical" variants I and II

(Index numbers, 1970 = 100)

Region	Numbers in 1970 (thousands)	Variants I and II		Variant I				Variant II			
		1980	1990	2000	2010	2020	2030	2000	2010	2020	2030
Europe[a]	268 242	109	114	117	119	118	116	113	109	100	88
Eastern Europe	61 504	110	114	118	121	118	118	114	109	98	88
Northern Europe	46 231	105	111	115	117	117	114	111	105	97	85
Western Europe	85 106	109	112	114	117	116	114	110	106	97	85
Southern Europe	75 401	111	117	118	122	120	116	117	113	105	92
USSR	144 210	117	123	126	135	132	131	123	124	113	101

[a] Excluding the USSR.

figure in the year 2000, would finish the projection period almost back again at the 1970 level (table VII.26).

Table VII.23 shows the changes in the proportions of people aged 60 and over implied in the two theoretical variants. As the mortality assumptions used implied a continuation of higher expectations of life for women as compared with men, the sex differentials noted in section C would continue under the theoretical variants. Moreover, as all people aged 60 and over at the end of the projection period were born after 1970, the numbers of aged persons would be the same under theoretical variants I and II, and the increase over the period would be consistently greater for women than for men, reflecting the lower mortality schedules for the former. But while the numbers of women and men respectively would be the same under each theoretical variant, their proportions in the total male and female populations would vary, as the size of each of those populations is affected by the two fertility variants.

Tables VII.27 and VII.28 illustrate the changes in the numbers of men and women aged 60 and over and 75 and over, when compared with 1970 (= 100), that would follow from the application of both theoretical variants. The increases are striking and consistently positive throughout; they are particularly marked amongst the *grands vieillards*. These are the increases (about which there is little doubt as the people have all been born) that could lead to almost a third of populations being composed by the end of the projection period of persons aged 60 and over, should fertility fall and remain below replacement level. The implications of these figures for combined sexes in terms of proportions has already been given in table VII.23.

Finally, how would the changes hypothesized in these theoretical variants impinge upon the breadwinning sectors of the population? Section C of this chapter, concerned with the application of the most likely variant, emphasized the relatively high proportions of most European populations which are in the working age groups, particularly in the younger sector between the ages of 15 and 44 years. In other words, these populations have a low dependency ratio, measured as the proportions aged less than 15 years and over 59 years to the populations aged 15-59 years. It was also emphasized in that section that these relatively high proportions of persons of working age would be maintained in most countries until almost the end of the century, but by then the non-demographic factors holding back the ageing process would be weakening and in many countries the dependency ratios would be starting to rise. Table VII.23 shows how substantially the pattern would change after about 1990, the rise gathering speed into the twenty-first century if fertility remains below replacement. A rapid fall in fertility, as under theoretical variant II, would tend at first to reduce the total proportion of population in the dependent age groups, but in the longer term, as population decrease sets in, the very high proportion in the aged category (60 years and over) would more than offset the reduction in the juvenile group (0-14), so increasing the dependency ratio again.

TABLE VII.27

Changes in the number of men and of women aged 60 and over, by region, 1970-2030 according to "theoretical" variants I and II

(Index numbers, 1970 = 100)

Region and sex	*Numbers in 1970 (thousands)*	*Variants I and II*					
		1980	*1990*	*2000*	*2010*	*2020*	*2030*
Europe[a]							
Men	31 978	109	127	144	148	175	189
Women	44 467	107	120	128	136	148	159
Eastern Europe							
Men	6 748	103	122	145	160	189	193
Women	9 321	108	125	139	146	167	170
Northern Europe							
Men	6 164	124	135	133	148	160	172
Women	8 516	112	116	112	121	130	140
Western Europe							
Men	8 030	101	114	133	145	154	165
Women	10 521	101	107	112	116	123	133
Southern Europe							
Men	11 036	114	141	165	181	204	229
Women	16 109	113	138	159	169	186	205
USSR							
Men	9 373	116	173	248	263	330	362
Women	19 645	188	146	169	165	191	207

[a] Excluding the USSR.

TABLE VII.28

Changes in the number of men and of women aged 75 and over, by region, 1970-2030, according to "theoretical" variants I and II

(Index numbers, 1970 = 100)

Region and sex	*Numbers in 1970 (thousands)*	*Variants I and II*					
		1980	*1990*	*2000*	*2010*	*2020*	*2030*
Europe[a]							
Men	6 230	141	175	187	221	235	271
Women	11 304	129	154	163	178	183	207
Eastern Europe							
Men	1 175	145	177	186	239	250	317
Women	2 081	140	175	186	213	216	260
Northern Europe							
Men	1 233	156	205	221	212	228	257
Women	2 338	130	150	155	146	153	171
Western Europe							
Men	1 614	138	157	158	188	205	219
Women	2 621	125	140	138	142	146	158
Southern Europe							
Men	2 208	131	176	204	260	271	317
Women	4 264	127	165	193	236	244	275
USSR							
Men	1 788	124	179	201	348	366	483
Women	4 321	141	194	204	249	242	289

[a] Excluding the USSR.

These theoretical patterns are illustrated in table VII.29. Under variant I Europe would experience a reduction of dependency ratios to 1980, after which they would rise, fairly slowly, to 76 per cent by 2030, compared with 71 per cent in 1970. Under variant II, the reduction would at first be much more marked, to a minimum ratio of only 59 per cent in 1990, thus reflecting the initial sharp decline in the proportion of young persons; but thereafter the rise would be steep to a ratio of 80 per cent by 2030, as the proportions aged 60 and over increased to 31 per cent of the population. Every region of Europe and the USSR with, however, some relatively minor differences with regard to levels and timing, would follow this general pattern (figure 21).

E. Interpreting projections

If human societies would standardize their fertility and mortality patterns and remain immobile, national and regional projections of their future numbers could be accepted as predictions. But the real world has neither been, nor seems likely to be of that character. This has been particularly so over the past thirty years or so in Europe and the USSR. Marriage patterns have been changing. The proportions marrying have been increasing in most areas but decreasing in some. The timing of births has been changing. After years of decline, some fertility patterns in countries of western and northern Europe showed signs of increase after the

TABLE VII.29

Dependency ratios, by region, 1970-2030, according to "theoretical" variants I and II

(Population aged less than 15 and 60 and above per 100 population aged 15-59)

Region	*Variant I*							*Variant II*						
	1970	*1980*	*1990*	*2000*	*2010*	*2020*	*2030*	*1970*	*1980*	*1990*	*2000*	*2010*	*2020*	*2030*
Europe[a]	71	65	66	68	68	72	76	71	64	59	61	63	69	80
Eastern Europe	67	62	64	65	66	73	73	67	60	57	59	61	71	77
Northern Europe	74	73	71	68	70	72	72	74	72	64	61	65	70	82
Western Europe	74	65	66	69	68	71	75	74	64	59	62	63	68	79
Southern Europe	69	63	63	68	68	72	79	69	63	59	60	62	68	81
USSR	68	57	62	67	62	70	73	68	57	56	59	57	66	75

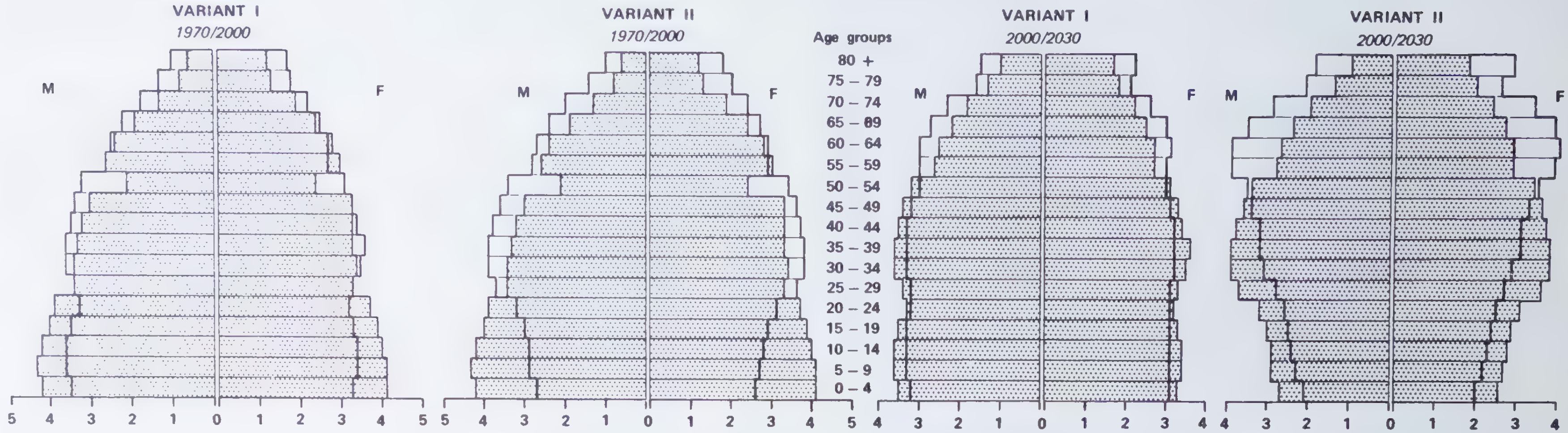
[a] Excluding the USSR.

FIGURE 21

Percentage age and sex distribution of population in Europe, by region, 1970, 2000 and 2030, according to "theoretical" variants I and II

(*Shaded area refers to the base year*)

EUROPE (*excluding the USSR*)



USSR

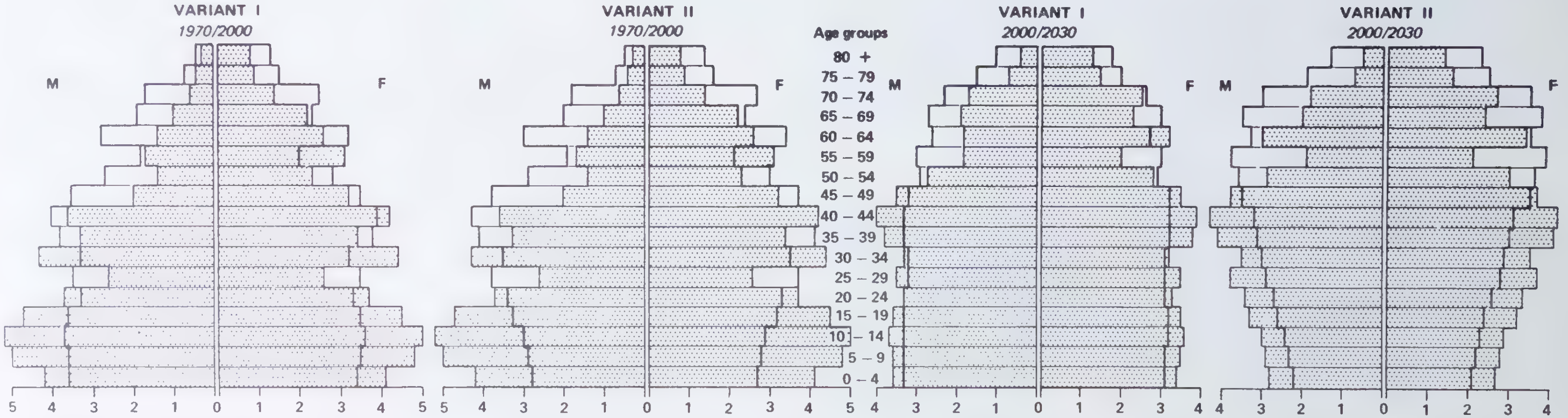
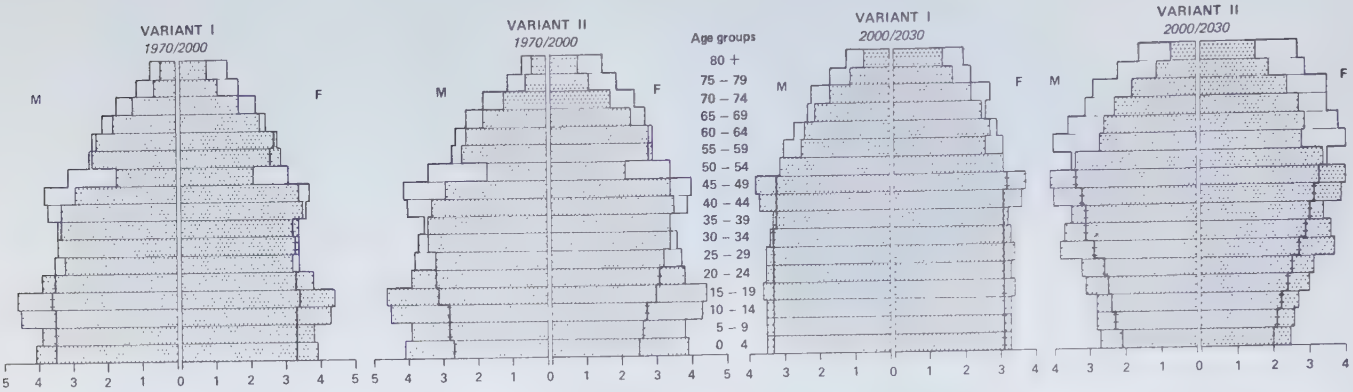
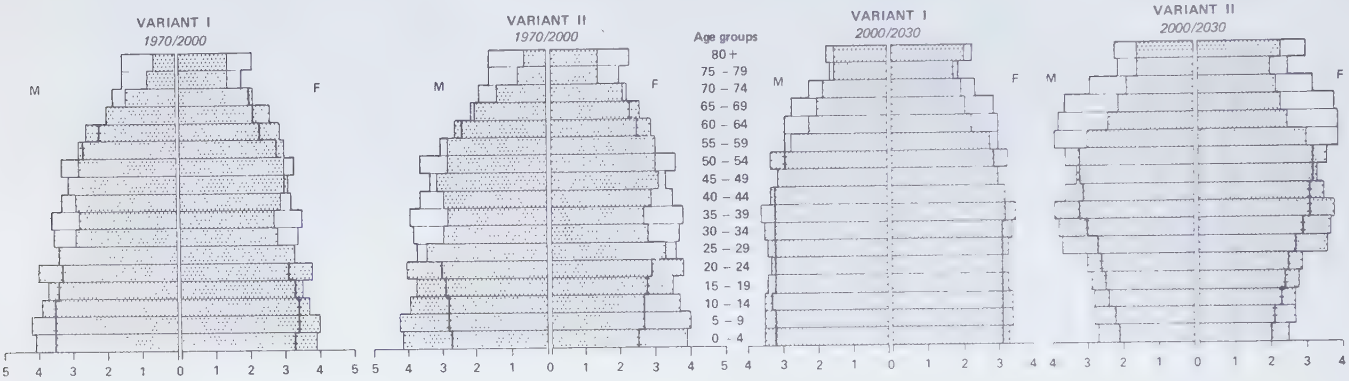


FIGURE 21 (*continued*)

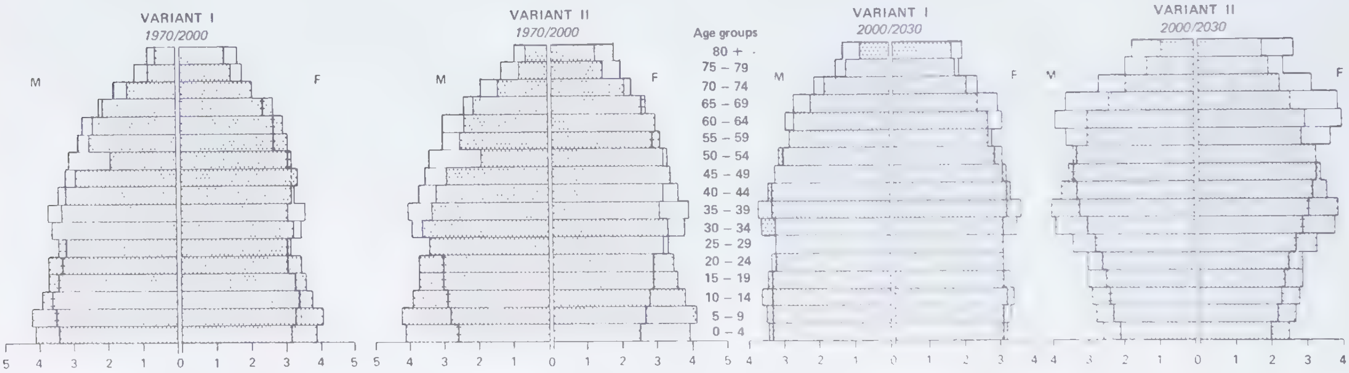
EASTERN EUROPE



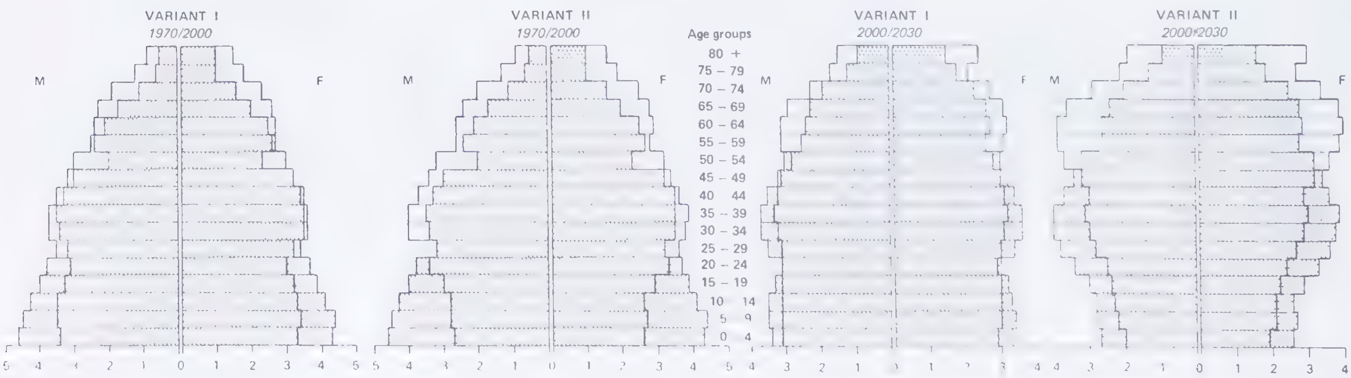
NORTHERN EUROPE



WESTERN EUROPE



SOUTHERN EUROPE



second World War, while those of most of the eastern countries were coming sharply downwards. Now, the patterns of most northern and western countries seem again to be downwards, and the pace of fertility decline seems to be gathering speed in southern Europe.

All these changes make the task of projection as difficult as ever. They also mean that projections cannot be taken as predictions and that, to have a practical meaning, projections need to be subject to continuous scrutiny —and generally revision—in the light of short-term changes in nuptiality and fertility, in migratory patterns, and in mortality.[27] Many countries are realizing this, and their revisions, which have become more frequent recently, have tended to be downwards rather than upwards.[28]

Thus, while the most likely variant in this study has attempted to give expression to the trends that have seemed realistic within very recent years in European countries as seen by their own experts, they can only be taken as the assessment of evidence then available, and undoubtedly many of these assessments will be subject to revision. The maximum and minimum variants presented in section B of this chapter may also be interpreted as possible parameters within which fluctuations might be anticipated in the future.

The greatest areas of uncertainty, as emphasized at the beginning of this chapter, still lie in the fields of fertility and nuptiality. There will, of course, continue to be short-term fluctuations in levels of fertility and in the proportions married, but there does not seem to be any substantial evidence at present that the trend of family formation and building is towards larger completed size. Indeed the contrary is suggested by the findings of several recent specialized fertility studies described in chapter V.

Yet not all is uncertain in a projection, particularly when age and sex structure are known and when life expectations are high and known to be relatively constant. In these situations assessing total populations is still hazardous because of the intrusion of the fertility variable, and it therefore follows that analysis of proportional distributions based on total populations can be subject to considerable errors; but likely rates of change for the population already born can be assessed with a reasonable degree of accuracy, the assessable target being progressively reduced to higher age groups as the time-scale of the projection increases. For the time span of the projection period covered in this study, the areas of relative certainty and uncertainty are illustrated in simple fashion in the following diagram. In terms of the relevance of projections to social and economic planning, this diagram means that while projections cannot yet predict changes in total population, even in the short term, because future changes in period fertility cannot be scientifically determined, much less uncertainty is involved in the assessment of future trends in the population already born by the base year. For example, subject to variations in participation rates, the numbers of entrants to the work force can be anticipated for at least 15 years ahead; changes in the total work force determined by likely entrants and exits from its structure can be assessed probably up to 20 years ahead;[29] and changes in the numbers of aged persons can be assessed for 60 years ahead. Thus projections should not be discarded out of hand because they may fail to hit future total population levels, for many of their components may continue to have a high degree of accuracy and to be of considerable relevance to social and economic planning.[30]

Yet neither the simplicity of the projection exercise nor the certainty of its results even with respect to the population already born should be overstated: there are still the uncertainties, for example, of major migratory movements and man-made disasters, both of which have been significant in the past. But ignoring these, the conclusions that seem relatively certain into the measurable future for the regions discussed in this chapter may be summarized as follows.

(*a*) In all but three or four countries birth rates seem unlikely to rise appreciably over the next decade: this seems to follow from both the nature of current fertility schedules and the age composition of the populations of childbearing age.

(*b*) Over the next decade, and probably for at least fifteen years ahead, there seems likely to be relative stability or decrease in the populations aged 5-14 years in about two-thirds of the countries of Europe and in the USSR. On a regional basis, there will be approximate stability in eastern, northern and southern Europe and a marked decline in western Europe.

(*c*) The populations coming of working age (15-19 years) will be about the same or smaller around 1985-1990 than they were in 1970 in 15 countries of Europe and in the USSR: southern Europe will be the only region in which the majority of countries will show an increase.

(*d*) While most countries will continue to experience some growth in their populations of working age (15-59 years) the rate of growth is likely to slow down markedly in the majority of countries from about 1985 until about the end of the century.

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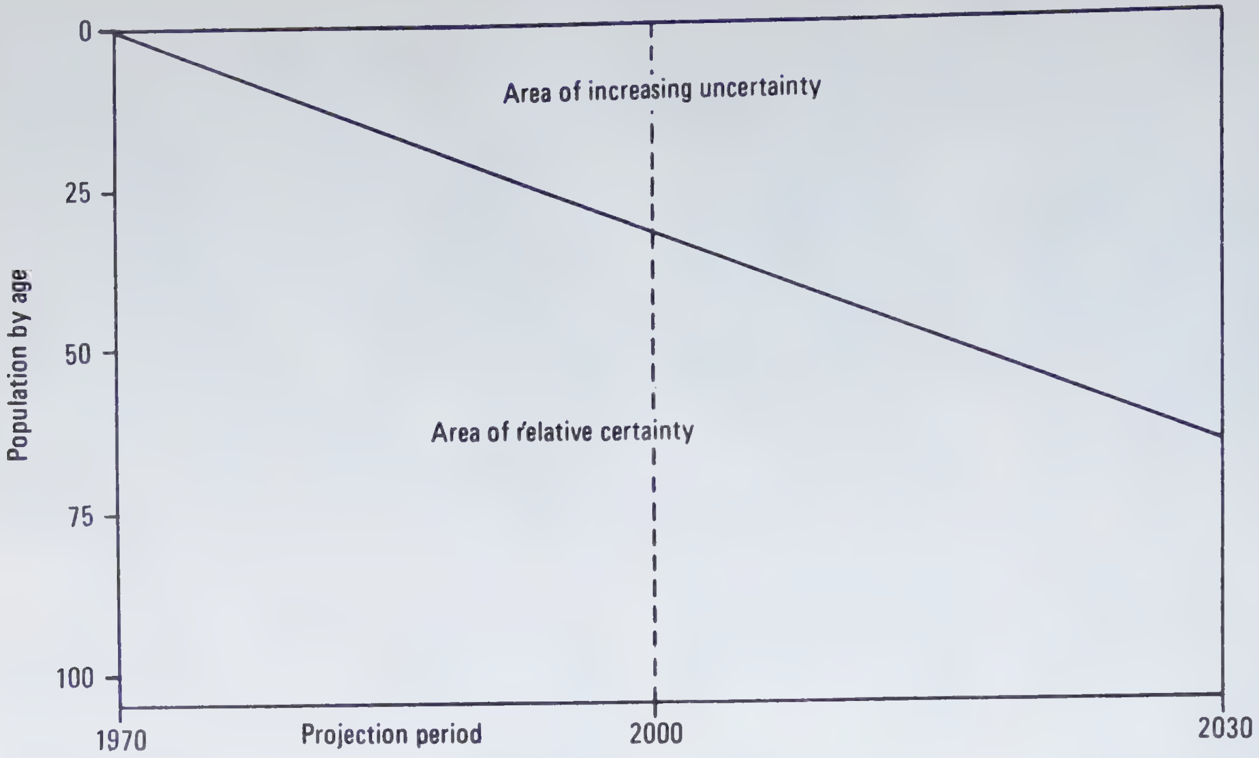
[27] For an appraisal of the predictive power of projections, see W. Brass, "Perspectives in population prediction" (with discussion), *Journal of the Royal Statistical Society* (London), vol. 137, part 4 (1974), pp. 532-583.

[28] This is particularly the case with the official series in the United Kingdom: the projections based on 1965 yielded a population of 66.4 million in 2001, compared with only 54.9 million for the projections based on 1972. As the latter implied substantially lower fertility levels than the former, the ultimate populations differed considerably in age composition as well as in total size. In the Netherlands, projections prepared in 1971 suggested a population of 17.1 millions by the year 2000, whereas projections based on 1973 suggested totals by 2000 ranging between 15.4 and 16.1 million.

[29] A promising approach, with respect to the changes in the male work force at least, is the working life-table.

[30] Projections made in the 1930s, when many countries were at or below replacement level fertility, tended to be completely rejected when subsequent rises in fertility discredited their validity in terms of total populations; but many of them contained data which remained valid but little used with relevance to educational and manpower planning and to social welfare services



(*e*) The fastest growing sector in populations for the remainder of the century will be that of persons aged 60 and over, and particularly those aged 75 and over. Substantial decadal growth will continue for this group well into the twenty-first century.

(*f*) In terms of dependency ratios, the total dependency burden to be supported by the population of working age is not likely to increase, and in many countries will decrease, for at least 15 years and probably further ahead; but, even if fertility patterns reach and remain below replacement levels, there will be a marked increase in the dependency burdens in all countries from about the end of the century, since the expected increase in the proportion of the old will be greater than the expected increase in the proportion of the young.

(*g*) While the total dependency burden is not likely to rise for some time ahead, its composition will be changing quite substantially in the low fertility countries, with an increasing ratio of old to young, in a way that will require major shifts of public investment concerned with social and economic welfare, with increasing proportions of such investment being transferred from the young to the old sectors of societies.

(*h*) Because of the current age-structures, which have been produced from the relatively high rates of increase in the recent past, the assumption of a drastic reduction of fertility will not bring about population decline in more than two or three countries of Europe for the remainder of this century, but in this circumstance growth would be slowing down markedly by that time, and the persistence of sub-replacement fertility would induce decline in most eastern, northern and western countries by the second decade of the twenty-first century.

An aspect of the European-type of fertility patterns that adds to the difficulties of projections is the extent to which they are subject to short-term fluctuations. With total fertilities around two children, and with such low mortality schedules, the pattern is one of very efficient and deliberate fertility control by married couples, and their deliberate reactions to changing social and economic circumstances by, for example, postponing marriage, postponing the initial birth, or postponing a last birth, can create considerable short-term variations in period fertility patterns. Understanding of the social, economic and psychological factors inducing such changes is still rudimentary, but their effectiveness is increased by the fact that they frequently seem to move in the same directions, not only over most social and economic classes within a single country, but over many countries, almost as international fashion. The baby boom of the 1950s and the widespread nature of recent fertility declines have these characteristics. But through all these short-term vicissitudes there seems to be running as a secular trend the downward movement towards the average of two children per couple.

Appendix Tables

APPENDIX TABLE A.II.1

Distributions of population by sex and age, and sex ratios, around 1950, 1960 and 1970

(Thousands, percentages and numbers of men per 100 women)

Country and date	Type of data[a]	Sex	Absolute numbers (thousands)	All ages	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
Albania																				
3.9.1950	C	M	626	100.0	14.5	12.9	12.1	10.2	9.0	6.6	6.1	5.6	4.8	3.8	3.7	2.4	2.6	2.1	1.4	2.1
		F	593	100.0	14.3	12.1	11.1	9.1	8.1	6.9	6.1	5.6	5.2	3.9	4.0	3.0	3.2	2.5	1.9	2.7
		M/F		*106*	*107*	*113*	*115*	*119*	*117*	*100*	*106*	*106*	*97*	*104*	*96*	*83*	*84*	*87*	*82*	*81*
2.10.1955	C	M	713	100.0	16.1	12.3	11.2	10.7	8.8	7.7	5.6	5.2	4.8	3.9	3.1	2.8	2.0	2.0	1.4	1.7
		F	678	100.0	15.8	12.0	10.3	9.6	8.0	7.1	5.9	5.3	4.9	4.4	3.2	3.4	2.6	2.4	1.9	2.6
		M/F		*105*	*108*	*109*	*114*	*117*	*117*	*115*	*100*	*103*	*103*	*93*	*100*	*87*	*78*	*88*	*77*	*67*
1.7.1969	E	M	1 068	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
		F	1 012	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
		M/F		..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Austria																				
1.6.1951	C	M	3 217	100.0	8.4	8.1	8.6	7.0	7.6	6.9	4.9	6.3	7.5	7.9	7.1	5.5	4.6	3.9	2.9	2.8
		F	3 717	100.0	7.0	6.8	7.2	5.8	6.5	7.9	5.7	7.0	7.9	7.7	7.2	6.3	5.4	4.5	3.4	3.5
		M/F		*87*	*105*	*104*	*103*	*104*	*100*	*76*	*75*	*78*	*82*	*89*	*85*	*76*	*74*	*74*	*72*	*69*
21.3.1961	C	M	3 296	100.0	9.0	7.5	8.0	8.0	8.0	6.3	7.0	6.4	4.5	5.9	6.8	6.9	5.6	4.0	2.9	3.3
		F	3 777	100.0	7.6	6.3	6.6	6.7	6.7	5.4	6.1	7.5	5.3	6.7	7.4	7.1	6.4	5.3	4.1	4.9
		M/F		*87*	*105*	*104*	*105*	*104*	*105*	*103*	*99*	*75*	*74*	*76*	*80*	*85*	*77*	*66*	*63*	*59*
12.5.1971	C	M	3 502	100.0	8.7	9.4	8.6	7.4	7.6	7.0	7.2	5.8	6.4	5.8	4.1	5.0	5.4	4.8	3.3	3.3
		F	3 955	100.0	7.3	7.9	7.2	6.4	6.6	6.1	6.3	5.1	5.8	7.0	5.0	6.0	6.5	5.9	4.8	6.0
		M/F		*89*	*105*	*105*	*105*	*103*	*103*	*103*	*102*	*102*	*98*	*74*	*72*	*73*	*73*	*73*	*62*	*48*
Belgium																				
1.7.1950	E	M	4 254	100.0	8.3	6.5	6.8	7.4	7.8	8.3	5.6	7.4	7.7	7.6	6.6	5.4	4.6	4.0	3.0	3.1
		F	4 385	100.0	7.8	6.1	6.4	7.1	7.4	7.8	5.3	7.1	7.5	7.5	6.9	6.0	5.2	4.5	3.5	4.0
		M/F		*97*	*104*	*103*	*101*	*101*	*103*	*104*	*103*	*101*	*100*	*98*	*93*	*87*	*87*	*86*	*83*	*74*
31.12.1961	C	M	4 497	100.0	8.7	8.2	7.9	6.8	6.2	6.7	7.3	7.4	5.8	6.1	6.6	6.3	5.4	4.1	2.9	3.6
		F	4 693	100.0	8.0	7.6	7.3	6.3	5.9	6.4	7.0	7.1	5.6	6.0	6.6	6.5	6.0	5.0	3.8	5.0
		M/F		*96*	*105*	*105*	*104*	*104*	*101*	*100*	*100*	*100*	*99*	*98*	*96*	*93*	*86*	*78*	*74*	*68*
1.7.1969	E	M	4 724	100.0	8.0	8.5	8.2	7.8	7.6	6.1	6.5	6.9	6.9	6.8	4.4	5.8	5.3	4.5	3.1	3.5
		F	4 922	100.0	7.3	7.8	7.6	7.2	7.0	5.6	6.1	6.6	6.6	6.6	4.4	6.0	5.9	5.4	4.3	5.6
		M/F		*96*	*105*	*105*	*104*	*104*	*104*	*105*	*102*	*101*	*100*	*98*	*96*	*92*	*87*	*79*	*70*	*60*
Bulgaria																				
31.12.1953	E	M	3 714	100.0	10.0	9.0	8.0	8.6	9.2	9.6	8.3	5.6	6.8	6.6	5.3	4.1	3.0	2.2	1.9	1.8
		F	3 712	100.0	9.5	8.7	7.8	8.3	8.9	9.3	8.4	5.7	6.6	6.5	5.3	4.2	3.4	2.9	2.4	2.3
		M/F		*100*	*105*	*104*	*104*	*104*	*104*	*103*	*99*	*100*	*102*	*101*	*101*	*97*	*89*	*77*	*82*	*80*

b	C	M	3957	100.0	8.5	8.8	8.4	8.2	7.8	7.8	8.4	7.1	7.2	5.7	6.0	5.1	3.9	2.9	2.0	2.2
		F	3964	100.0	8.1	8.4	8.1	7.9	7.8	7.6	8.3	7.0	7.1	5.6	5.8	5.2	4.2	3.4	2.5	2.9
		M/F		*100*	*105*	*104*	*104*	*103*	*101*	*101*	*101*	*101*	*101*	*102*	*103*	*98*	*94*	*85*	*81*	*77*
1.7.1970	E	M	4244	100.0	7.8	7.6	7.9	8.2	8.2	6.8	6.8	7.7	7.7	7.4	4.4	5.6	5.0	3.8	2.5	2.4
		F	4246	100.0	7.4	7.3	7.6	7.8	8.0	6.7	6.7	7.6	7.6	7.5	4.5	5.6	5.2	4.1	2.9	3.4
		M/F		*100*	*105*	*105*	*104*	*105*	*103*	*101*	*100*	*101*	*102*	*99*	*99*	*101*	*96*	*93*	*85*	*72*
Czechoslovakia																				
1.3.1950	C	M	5997	100.0	10.3	8.3	7.9	8.4	8.6	6.7	6.4	8.2	7.6	6.8	5.9	4.4	3.6	2.8	2.1	2.0
		F	6342	100.0	9.4	7.6	7.3	7.8	8.4	6.5	6.4	8.0	7.4	6.9	6.3	5.0	4.4	3.4	2.6	2.6
		M/F		*95*	*104*	*103*	*103*	*102*	*97*	*98*	*96*	*98*	*97*	*93*	*88*	*82*	*78*	*78*	*76*	*72*
1.3.1961	C	M	6705	100.0	8.7	9.9	9.9	8.0	6.6	6.7	7.2	7.5	4.6	6.4	6.8	5.9	4.5	3.0	2.0	2.2
		F	7041	100.0	8.0	9.0	9.0	7.4	6.1	6.3	7.0	7.5	4.6	6.4	6.9	6.1	5.3	4.0	2.9	3.3
		F/M		*95*	*105*	*104*	*104*	*103*	*102*	*101*	*98*	*95*	*95*	*95*	*95*	*91*	*81*	*72*	*67*	*63*
1.12.1970	C	M	6989	100.0	7.8	8.1	8.4	9.4	9.1	7.3	6.0	6.2	6.6	6.8	4.0	5.6	5.5	4.1	2.7	2.4
		F	7356	100.0	7.1	7.3	7.6	8.6	8.4	6.8	5.7	6.0	6.5	7.0	4.1	5.9	6.0	5.0	3.9	4.2
		M/F		*95*	*105*	*105*	*105*	*105*	*104*	*101*	*100*	*99*	*96*	*93*	*92*	*91*	*87*	*78*	*66*	*53*
Denmark																				
7.11.1950	C	M	2123	100.0	10.1	9.5	7.5	7.0	7.0	7.4	7.3	7.4	7.2	6.4	5.7	4.8	4.1	3.4	2.6	2.7
		F	2158	100.0	9.4	8.9	7.2	6.7	6.9	7.4	7.3	7.3	7.2	6.6	6.0	5.1	4.4	3.7	2.7	3.2
		M/F		*98*	*105*	*104*	*103*	*103*	*100*	*98*	*99*	*99*	*98*	*96*	*93*	*93*	*92*	*91*	*93*	*84*
26.9.1960	C	M	2273	100.0	8.3	8.3	9.3	8.7	6.8	6.1	6.2	6.7	6.6	6.6	6.3	5.5	4.7	3.7	2.8	3.3
		F	2312	100.0	7.7	7.8	8.7	8.2	6.5	6.1	6.2	6.8	6.6	6.7	6.4	5.8	5.2	4.2	3.2	4.0
		M/F		*98*	*105*	*105*	*104*	*104*	*103*	*99*	*98*	*97*	*98*	*98*	*97*	*93*	*89*	*88*	*87*	*83*
9.11.1970	C	M	2460	100.0	8.0	8.2	7.7	7.8	8.7	8.2	6.3	5.7	5.7	6.1	5.9	5.6	5.0	4.1	3.1	3.6
		F	2491	100.0	7.4	7.8	7.2	7.3	8.0	7.6	6.0	5.6	5.7	6.1	5.9	5.9	5.6	4.8	3.8	5.2
		M/F		*99*	*106*	*105*	*105*	*106*	*107*	*107*	*104*	*101*	*99*	*97*	*98*	*95*	*88*	*85*	*78*	*68*
Finland																				
31.12.1950	C	M	1926	100.0	13.3	10.0	8.7	8.2	8.6	7.7	6.4	7.0	7.1	6.0	4.9	3.8	3.1	2.2	1.5	1.4
		F	2104	100.0	11.7	8.8	7.7	7.3	7.7	7.6	6.8	7.2	7.2	6.2	5.4	4.4	3.9	3.1	2.3	2.5
		M/F		*92*	*105*	*105*	*103*	*103*	*102*	*92*	*86*	*89*	*90*	*88*	*82*	*80*	*72*	*65*	*59*	*52*
31.12.1960	C	M	2142	100.0	9.7	10.5	11.7	8.8	7.4	6.9	7.2	6.5	5.5	5.9	5.8	4.7	3.5	2.5	1.7	1.5
		F	2304	100.0	8.7	9.3	10.5	7.9	6.6	6.1	6.6	6.7	6.0	6.4	6.3	5.3	4.5	3.4	2.6	2.9
		M/F		*93*	*104*	*104*	*104*	*103*	*104*	*105*	*101*	*91*	*84*	*86*	*86*	*82*	*73*	*68*	*60*	*49*
31.12.1970	C	M	2220	100.0	7.8	8.7	9.1	9.7	10.3	7.6	6.6	6.3	6.6	5.9	4.8	4.9	4.6	3.2	2.1	1.8
		F	2378	100.0	7.0	7.9	8.2	8.6	9.1	6.8	6.0	5.7	6.2	6.3	5.6	5.8	5.6	4.4	3.3	3.5
		M/F		*93*	*104*	*104*	*104*	*105*	*105*	*104*	*103*	*102*	*99*	*87*	*80*	*79*	*76*	*69*	*58*	*48*
France																				
1.7.1950	E	M	20195	100.0	9.9	6.1	6.8	7.8	8.3	8.4	5.4	6.9	7.7	7.6	6.5	4.7	4.2	3.6	2.9	3.1
		F	21748	100.0	8.9	5.5	6.3	7.1	7.4	7.5	4.9	6.5	7.1	7.1	6.6	6.0	5.4	4.8	3.9	5.0
		M/F		*93*	*104*	*103*	*101*	*103*	*104*	*104*	*103*	*99*	*100*	*99*	*91*	*73*	*72*	*69*	*69*	*59*
7.3.1962	C	M	22560	100.0	7.6	9.0	9.4	7.8	6.3	6.9	7.5	7.3	6.2	4.8	6.3	6.0	5.3	3.6	2.6	3.4
		F	23899	100.0	6.9	8.2	8.5	7.1	5.6	6.2	6.8	6.8	5.9	4.7	6.2	6.1	5.7	5.0	4.1	6.2
		M/F		*94*	*104*	*104*	*104*	*104*	*107*	*105*	*104*	*101*	*99*	*97*	*96*	*93*	*87*	*68*	*61*	*52*

APPENDIX TABLE A.II.1 (*continued*)

Distributions of population by sex and age, and sex ratios, around 1950, 1960 and 1970

(*Thousands, percentages and numbers of men per 100 women*)

Country and date	*Type of data* [a]	*Sex*	*Absolute numbers (thousands)*	*All ages*	*0-4*	*5-9*	*10-14*	*15-19*	*20-24*	*25-29*	*30-34*	*35-39*	*40-44*	*45-49*	*50-54*	*55-59*	*60-64*	*65-69*	*70-74*	*75+*
1.7.1970	E	M	24 789	100.0	8.6	7.9	8.5	8.5	9.0	6.3	6.4	6.8	6.9	6.6	4.1	5.0	5.0	4.3	3.0	3.2
		F	25 979	100.0	7.9	7.2	7.8	7.8	8.1	5.6	5.6	6.2	6.4	6.4	4.1	5.2	5.5	5.1	4.3	6.7
		M/F		*95*	*104*	*104*	*104*	*104*	*105*	*108*	*107*	*105*	*103*	*98*	*95*	*91*	*87*	*80*	*66*	*46*
German Democratic Republic																				
31.8.1950	C	M	8 161	100.0	6.8	8.8	10.7	8.2	6.4	5.2	3.6	6.1	7.6	8.3	7.1	5.8	5.3	4.2	3.3	2.7
		F	10 227	100.0	5.2	6.7	8.2	6.6	6.4	6.7	4.8	7.7	8.5	8.2	7.7	6.7	5.8	4.4	3.4	3.0
		M/F		*80*	*105*	*104*	*104*	*100*	*80*	*61*	*61*	*63*	*71*	*81*	*75*	*69*	*73*	*76*	*77*	*72*
1.7.1960	E	M	7 760	100.0	10.6	7.1	6.3	10.2	7.2	7.2	5.8	4.8	3.3	5.5	6.9	7.3	5.9	4.5	3.6	3.9
		F	9 478	100.0	8.2	5.5	5.0	8.1	5.7	5.9	6.0	6.3	4.4	7.2	8.0	7.6	6.9	5.7	4.5	4.8
		M/F		*82*	*105*	*105*	*103*	*103*	*103*	*100*	*80*	*62*	*61*	*63*	*70*	*78*	*70*	*64*	*66*	*67*
1.1.1971	C	M	7 865	100.0	7.9	9.3	8.7	8.6	6.3	7.1	8.6	6.9	6.0	4.4	3.1	4.7	5.6	5.4	3.7	3.8
		F	9 203	100.0	6.4	7.6	7.0	7.0	5.2	6.0	7.2	5.8	5.8	6.0	4.4	6.5	7.2	6.4	5.2	6.3
		M/F		*86*	*105*	*105*	*105*	*106*	*104*	*101*	*102*	*102*	*88*	*63*	*61*	*61*	*66*	*72*	*61*	*52*
Germany, Federal Republic of																				
13.9.1950	C	M	23 263	100.0	7.6	8.2	9.8	7.8	7.8	6.7	4.7	7.0	7.8	8.0	6.4	4.9	4.3	3.6	2.8	2.6
		F	26 580	100.0	6.3	6.8	8.2	6.6	7.0	7.9	5.6	8.1	8.4	7.7	6.9	5.8	4.9	3.9	3.0	2.8
		M/F		*88*	*105*	*104*	*104*	*104*	*98*	*75*	*73*	*76*	*82*	*91*	*82*	*74*	*77*	*81*	*82*	*79*
6.6.1961	C	M	26 413	100.0	8.7	7.6	7.4	7.1	9.2	7.6	7.4	6.2	4.6	5.9	6.8	6.7	5.3	3.6	2.7	3.1
		F	29 761	100.0	7.3	6.4	6.2	6.0	7.8	6.4	6.5	7.2	5.7	7.1	7.7	7.0	6.1	4.9	3.6	4.0
		M/F		*89*	*105*	*105*	*105*	*105*	*105*	*106*	*102*	*76*	*72*	*74*	*78*	*85*	*77*	*65*	*66*	*68*
27.5.1970	C	M	28 867	100.0	8.4	8.8	7.7	7.1	6.6	7.7	9.0	7.1	6.7	5.6	3.7	5.4	5.4	4.7	3.0	3.0
		F	31 784	100.0	7.2	7.7	6.7	6.1	5.7	6.5	7.4	5.9	6.2	6.9	4.6	6.9	6.7	5.7	4.4	5.3
		M/F		*91*	*105*	*105*	*106*	*105*	*105*	*108*	*109*	*109*	*98*	*74*	*72*	*72*	*74*	*74*	*61*	*52*
Greece																				
7.4.1951	C	M	3 722	100.0	10.3	9.0	10.5	10.6	9.6	7.8	6.4	6.6	6.4	5.7	4.5	3.5	2.9	2.4	1.8	2.0
		F	3 911	100.0	9.2	8.0	9.6	10.2	9.6	8.0	6.8	6.8	6.5	5.7	4.8	4.0	3.5	2.8	2.1	2.5
		M/F		*95*	*106*	*106*	*104*	*99*	*95*	*92*	*91*	*92*	*95*	*96*	*90*	*85*	*79*	*81*	*81*	*76*
19.3.1961	C	M	4 092	100.0	10.0	9.0	9.2	7.6	8.7	8.5	8.4	6.2	5.2	6.0	5.6	4.7	3.7	2.5	2.0	2.7
		F	4 297	100.0	9.0	8.1	8.3	7.2	8.6	8.7	8.5	6.3	5.6	6.0	5.5	4.7	4.3	3.0	2.7	3.5
		M/F		*95*	*106*	*106*	*105*	*101*	*96*	*93*	*93*	*93*	*89*	*95*	*96*	*97*	*82*	*81*	*72*	*73*
14.3.1971	C	M	4 280	100.0	9.1	8.4	8.6	7.8	7.6	5.7	6.7	7.3	7.5	5.7	4.8	5.6	5.1	4.0	2.8	3.2
		F	4 489	100.0	8.4	7.6	7.7	7.2	6.8	5.8	7.1	7.5	7.6	6.0	5.3	5.7	5.1	4.3	3.6	4.3
		M/F		*95*	*103*	*106*	*106*	*104*	*107*	*95*	*90*	*93*	*94*	*91*	*86*	*95*	*94*	*90*	*74*	*69*

Hungary																				
1.1.1949	C	M	4423	100.0	9.2	8.7	8.4	8.8	8.7	8.3	5.2	8.1	7.3	7.0	5.6	4.2	3.8	3.0	2.0	1.9
		F	4781	100.0	8.2	7.8	7.6	8.1	8.4	8.5	5.4	8.2	7.3	6.8	6.2	4.9	4.5	3.4	2.4	2.3
		M/F		*93*	*104*	*103*	*102*	*101*	*96*	*90*	*88*	*91*	*92*	*95*	*83*	*81*	*78*	*80*	*80*	*77*
1.1.1960	C	M	4804	100.0	8.8	9.7	8.3	7.9	6.9	7.4	7.6	7.4	4.4	7.0	6.4	5.8	4.5	3.1	2.3	2.4
		F	5157	100.0	7.8	8.7	7.5	7.3	6.8	7.1	7.5	7.7	4.6	7.3	6.6	5.9	5.1	3.9	3.0	3.2
		M/F		*93*	*105*	*104*	*103*	*101*	*95*	*97*	*95*	*90*	*89*	*89*	*91*	*91*	*82*	*74*	*71*	*70*
1.1.1970	C	M	4998	100.0	7.1	6.7	8.4	9.2	7.9	7.7	6.6	7.1	7.0	6.9	4.1	6.2	5.3	4.3	3.0	2.6
		F	5317	100.0	6.4	5.9	7.5	8.3	7.3	7.0	6.6	6.8	7.0	7.2	4.5	6.8	5.8	4.8	3.9	4.1
		M/F		*94*	*104*	*106*	*106*	*104*	*102*	*104*	*94*	*98*	*94*	*90*	*86*	*86*	*85*	*84*	*73*	*58*
Ireland																				
8.4.1951	C	M	1507	100.0	10.7	9.5	8.8	8.4	7.0	6.6	6.4	6.8	6.2	5.4	5.5	4.3	4.1	3.6	3.2	3.4
		F	1454	100.0	10.5	9.5	8.8	7.9	6.7	6.8	6.5	6.8	5.9	5.4	5.5	4.4	4.2	3.7	3.5	3.9
		M/F		*104*	*105*	*104*	*104*	*110*	*108*	*101*	*101*	*103*	*109*	*105*	*104*	*102*	*100*	*102*	*96*	*91*
9.4.1961	C	M	1416	100.0	10.8	10.4	10.4	8.5	5.6	5.1	5.3	5.8	6.0	6.3	5.8	4.9	4.5	3.6	3.1	3.9
		F	1402	100.0	10.6	10.1	10.1	8.1	5.6	5.2	5.6	6.1	6.1	6.1	5.4	4.8	4.8	3.7	3.5	4.6
		M/F		*101*	*103*	*104*	*105*	*106*	*103*	*99*	*96*	*97*	*100*	*104*	*109*	*103*	*96*	*98*	*90*	*86*
1.4.1971	E	M	1496	100.0	10.7	10.8	10.1	9.1	7.8	6.0	5.1	5.0	5.1	5.4	5.4	5.3	4.5	3.5	2.9	3.6
		F	1482	100.0	10.3	10.4	9.8	8.8	7.5	5.9	5.0	4.9	5.1	5.4	5.3	5.1	4.4	3.8	3.5	4.5
		M/F		*101*	*105*	*105*	*103*	*105*	*105*	*103*	*103*	*103*	*100*	*100*	*101*	*104*	*103*	*93*	*85*	*81*
Italy																				
4.9.1951	C	M	22961	100.0	9.7	8.6	9.3	8.8	8.8	8.2	5.9	7.1	7.1	6.0	5.1	4.1	3.6	3.0	2.2	2.4
		F	24197	100.0	8.7	7.8	8.6	8.2	8.3	8.3	6.1	7.2	7.1	6.1	5.5	4.9	4.3	3.5	2.5	2.8
		M/F		*95*	*105*	*105*	*103*	*101*	*100*	*94*	*91*	*93*	*95*	*94*	*88*	*80*	*80*	*82*	*85*	*80*
15.10.1961	C	M	24784	100.0	8.7	8.2	8.7	7.7	8.3	7.7	7.7	7.5	5.3	6.4	6.3	5.1	4.1	3.0	2.4	2.8
		F	25840	100.0	7.9	7.5	8.0	7.2	7.8	7.3	7.5	7.5	5.5	6.5	6.3	5.4	4.7	3.9	3.1	3.7
		M/F		*96*	*105*	*104*	*104*	*103*	*102*	*100*	*99*	*95*	*93*	*94*	*95*	*92*	*84*	*74*	*73*	*72*
1.7.1971	E	M	26322	100.0	8.8	8.7	7.8	7.6	8.0	7.0	7.4	7.0	6.9	6.6	4.3	5.7	4.9	3.6	2.5	3.0
		F	27577	100.0	8.1	8.1	7.2	7.0	7.4	6.6	7.2	6.8	6.8	6.8	4.6	6.0	5.3	4.2	3.4	4.6
		M/F		*95*	*104*	*103*	*104*	*104*	*104*	*102*	*99*	*98*	*97*	*92*	*90*	*91*	*88*	*81*	*70*	*62*
Netherlands																				
1.7.1950	E	M	5041	100.0	12.3	9.5	8.4	8.2	8.0	7.8	6.8	6.6	6.3	5.7	5.0	4.3	3.6	2.9	2.2	2.3
		F	5072	100.0	11.6	9.0	8.0	7.8	7.8	7.9	6.9	6.9	6.6	6.0	5.3	4.6	3.8	3.1	2.4	2.6
		M/F		*99*	*106*	*105*	*104*	*104*	*102*	*99*	*98*	*96*	*96*	*95*	*94*	*94*	*95*	*94*	*93*	*88*
31.5.1960	C	M	5707	100.0	11.2	9.9	10.5	8.1	7.1	6.8	6.5	6.6	5.7	5.6	5.3	4.6	3.9	3.1	2.4	2.7
		F	5755	100.0	10.6	9.3	9.9	7.7	6.8	6.6	6.6	6.8	5.8	5.9	5.6	5.0	4.3	3.5	2.6	3.1
		M/F		*99*	*105*	*105*	*105*	*104*	*103*	*102*	*99*	*97*	*97*	*95*	*94*	*92*	*90*	*89*	*89*	*85*
1.7.1970	E	M	6503	100.0	9.3	9.5	9.1	8.7	9.3	7.3	6.5	6.1	5.8	5.7	4.9	4.6	4.1	3.4	2.5	3.2
		F	6531	100.0	8.9	9.1	8.6	8.3	8.8	6.7	6.0	5.8	5.8	5.9	5.1	5.0	4.6	4.0	3.1	4.2
		M/F		*100*	*105*	*105*	*105*	*105*	*106*	*108*	*109*	*105*	*100*	*96*	*95*	*92*	*87*	*83*	*78*	*75*

APPENDIX TABLE A.II.1 (*continued*)

Distributions of population by sex and age, and sex ratios, around 1950, 1960 and 1970

(Thousands, percentages and numbers of men per 100 women)

Country and date	Type of data[a]	Sex	Absolute numbers (thousands)	All ages	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
Norway																				
1.12.1950	C	M	1625	100.0	10.1	8.4	6.7	6.4	7.2	8.2	8.1	7.8	7.1	6.5	5.9	5.0	3.9	3.1	2.5	3.1
		F	1653	100.0	9.4	7.9	6.4	6.1	6.8	7.8	7.9	7.5	7.1	6.7	6.2	5.3	4.4	3.6	3.0	4.0
		M/F		98	*105*	*105*	*104*	*104*	*105*	*103*	*101*	*102*	*98*	*95*	*93*	*93*	*89*	*83*	*84*	*75*
1.11.1960	C	M	1789	100.0	8.8	8.7	9.1	7.6	6.0	5.7	6.4	7.3	7.2	6.8	6.2	5.5	4.8	3.8	2.7	3.5
		F	1802	100.0	8.3	8.2	8.6	7.2	5.7	5.4	6.1	7.1	7.1	6.7	6.3	5.9	5.3	4.3	3.3	4.6
		M/F		99	*105*	*105*	*106*	*105*	*104*	*104*	*104*	*102*	*101*	*101*	*97*	*92*	*90*	*88*	*83*	*76*
1.11.1970	C	M	1934	100.0	8.7	8.3	8.1	8.0	8.4	6.9	5.4	5.1	5.7	6.5	6.4	5.8	5.1	4.2	3.2	3.9
		F	1955	100.0	8.2	7.8	7.7	7.6	7.8	6.4	5.2	5.0	5.5	6.3	6.4	6.0	5.5	4.9	4.1	5.5
		M/F		99	106	106	105	*105*	*107*	*106*	*103*	*102*	*103*	*102*	*98*	*97*	*91*	*84*	*78*	*70*
Poland																				
3.12.1950	C	M	11546	100.0	13.3	8.7	10.0	10.4	7.7	8.0	5.6	6.7	7.4	6.3	4.9	3.5	2.7	1.9	1.3	1.3
		F	13068	100.0	11.4	7.5	8.7	9.1	9.2	8.6	5.8	7.1	7.3	6.3	5.4	3.9	3.4	2.4	1.7	2.0
		M/F		88	*104*	*102*	*102*	*100*	*74*	*82*	*85*	*84*	*90*	*89*	*80*	*78*	*71*	*70*	*66*	*58*
6.12.1960	C	M	14059	100.0	12.3	12.8	11.0	6.9	6.1	8.1	8.0	6.8	4.4	5.3	5.7	4.6	3.3	2.1	1.4	1.2
		F	15347	100.0	10.8	11.2	9.7	6.2	7.1	7.5	7.7	7.2	4.7	5.7	5.9	5.0	4.1	2.8	2.1	2.2
		M/F		92	*105*	*104*	*104*	*101*	*79*	*99*	*95*	*86*	*86*	*85*	*89*	*85*	*74*	*68*	*61*	*53*
8.12.1970	C	M	15854	100.0	8.1	8.8	10.9	11.2	9.5	6.0	6.8	7.1	6.9	5.8	3.7	4.2	4.3	3.1	1.9	1.6
		F	16789	100.0	7.3	7.9	9.9	10.2	8.7	5.6	6.4	6.7	6.9	6.4	4.1	4.9	4.9	4.0	2.9	3.1
		M/F		94	*105*	*105*	*104*	*104*	*103*	*101*	*100*	*100*	*95*	*85*	*85*	*82*	*82*	*75*	*62*	*50*
Portugal																				
15.12.1950	C	M	4060	100.0	11.2	10.0	10.0	10.0	9.4	8.2	6.5	6.7	6.1	5.2	4.3	3.6	3.1	2.3	1.7	1.7
		F	4381	100.0	9.9	9.0	9.0	9.3	8.7	7.9	6.4	6.7	6.3	5.7	4.9	4.2	3.9	3.1	2.3	2.8
		M/F		93	*104*	*104*	*103*	*99*	*100*	*97*	*95*	*93*	*90*	*85*	*82*	*79*	*75*	*70*	*69*	*55*
15.12.1960	C	M	4254	100.0	10.9	10.2	10.0	8.6	7.9	7.6	7.2	6.7	5.6	5.7	5.3	4.3	3.4	2.6	2.0	2.0
		F	4635	100.0	9.5	9.0	9.0	8.2	7.9	7.5	7.2	6.6	5.6	5.8	5.5	4.8	4.1	3.3	2.6	3.3
		M/F		92	*105*	*104*	*102*	*96*	*92*	*93*	*92*	*93*	*92*	*91*	*87*	*82*	*77*	*74*	*68*	*56*
1.7.1971	E	M	4214	100.0	10.2	10.7	9.6	9.2	8.9	7.0	5.9	5.9	5.7	5.5	4.8	4.8	4.3	3.2	2.2	2.2
		F	4655	100.0	8.8	9.2	8.3	8.0	7.9	7.1	6.6	6.5	6.2	5.9	5.0	5.1	4.8	4.0	3.0	3.6
		M/F		91	*106*	*105*	*104*	*104*	*102*	*89*	*81*	*82*	*83*	*85*	*86*	*85*	*81*	*73*	*66*	*55*
Romania																				
25.1.1948	C	M	7672	100.0	7.2	6.4	17.0	9.2	9.5	9.2	7.8	4.6	6.2	6.1	5.2	4.2	2.7	2.0	1.5	1.1
		F	8201	100.0	6.2	5.5	15.5	9.2	9.1	8.9	8.2	5.3	6.9	6.3	5.2	4.7	3.1	2.5	1.8	1.6
		M/F		94	*109*	*108*	*103*	*94*	*98*	*98*	*89*	*80*	*83*	*90*	*92*	*83*	*82*	*78*	*77*	*68*
21.2.1956	C	M	8503	100.0	11.1	9.8	7.9	9.2	9.5	9.2	7.8	4.6	6.2	6.4	5.4	4.4	3.2	2.4	1.7	1.3
		F	8986	100.0	10.1	8.9	7.3	8.9	8.8	8.6	8.0	5.2	6.7	6.3	5.2	4.7	3.9	3.1	2.2	2.0
		M/F		95	*104*	*104*	*103*	*98*	*102*	*101*	*92*	*84*	*87*	*96*	*98*	*88*	*76*	*73*	*72*	*63*

1.7.1970	E	M	9945	100.0	10.5	7.3	9.2	9.3	7.7	6.5	7.9	7.8	7.4	6.2	3.4	4.9	4.4	3.4	2.1	1.9
		F	10308	100.0	9.7	6.7	8.5	8.6	7.1	6.2	7.6	7.5	7.2	6.7	4.0	5.6	4.8	3.9	2.8	3.0
		M/F		*97*	*105*	*105*	*104*	*104*	*104*	*101*	*100*	*101*	*99*	*89*	*81*	*85*	*88*	*85*	*73*	*62*
Spain																				
31.12.1950	C	M	13470	100.0	9.8	9.3	8.8	9.8	9.8	8.6	6.7	6.4	6.5	5.8	4.9	3.9	3.4	2.6	1.8	1.7
		F	14507	100.0	8.6	8.2	7.9	9.4	9.3	8.4	7.2	6.9	6.5	6.0	5.2	4.2	3.9	3.2	2.4	2.7
		M/F		*93*	*105*	*106*	*103*	*97*	*98*	*95*	*87*	*85*	*93*	*91*	*88*	*86*	*81*	*76*	*72*	*59*
31.12.1960	C	M	14726	100.0	10.2	9.3	9.3	8.3	7.8	8.1	7.9	7.2	5.7	5.5	5.3	4.6	3.7	2.8	2.1	2.1
		F	15650	100.0	9.2	8.4	8.3	7.7	7.0	7.9	7.7	7.1	6.1	5.9	5.6	5.0	4.3	3.5	2.7	3.2
		M/F		*94*	*104*	*104*	*105*	*102*	*104*	*97*	*96*	*96*	*88*	*87*	*90*	*88*	*80*	*76*	*72*	*60*
31.12.1970	C	M	16642	100.0	10.0	9.9	9.3	8.2	7.7	6.7	6.1	7.2	6.9	6.3	4.8	4.5	4.1	3.4	2.3	2.5
		F	17396	100.0	9.0	9.1	8.5	7.7	7.2	6.4	6.0	6.9	6.8	6.2	5.2	5.1	4.7	4.1	3.1	4.0
		M/F		*96*	*106*	*104*	*105*	*102*	*101*	*100*	*98*	*99*	*97*	*97*	*89*	*85*	*84*	*80*	*71*	*60*
Sweden																				
31.12.1950	C	M	3506	100.0	8.9	8.6	6.6	6.0	6.6	7.7	7.8	7.8	7.8	6.9	6.1	5.2	4.4	3.7	2.8	3.1
		F	3535	100.0	8.4	8.2	6.3	5.8	6.5	7.5	7.6	7.6	7.6	7.0	6.3	5.6	4.9	4.0	3.1	3.7
		M/F		*99*	*105*	*105*	*104*	*103*	*100*	*102*	*102*	*102*	*102*	*98*	*96*	*93*	*90*	*90*	*88*	*83*
1.11.1960	C	M	3739	100.0	7.0	7.3	8.3	8.1	6.3	5.9	6.3	7.2	7.2	7.2	7.0	6.0	5.1	4.1	3.1	3.8
		F	3756	100.0	6.5	6.9	7.9	7.8	6.1	5.8	6.2	7.1	7.1	7.1	7.0	6.3	5.5	4.6	3.7	4.7
		M/F		*100*	*106*	*106*	*105*	*104*	*103*	*102*	*101*	*102*	*102*	*102*	*100*	*96*	*93*	*88*	*84*	*81*
1.11.1970	C	M	4034	100.0	7.4	7.3	6.8	7.0	8.4	8.1	6.2	5.6	5.9	6.6	6.4	6.3	5.8	4.6	3.5	4.1
		F	4043	100.0	7.0	6.9	6.4	6.7	8.0	7.4	5.9	5.4	5.8	6.5	6.4	6.3	6.1	5.2	4.2	5.8
		M/F		*100*	*106*	*105*	*106*	*104*	*105*	*108*	*106*	*103*	*101*	*101*	*100*	*99*	*96*	*89*	*83*	*71*
Switzerland																				
1.12.1950	C	M	2272	100.0	9.3	8.8	6.9	7.2	7.4	7.6	6.9	7.4	7.7	7.0	6.1	5.0	4.1	3.5	2.6	2.5
		F	2443	100.0	8.2	7.9	6.2	6.7	7.4	7.6	6.6	7.2	7.6	7.2	6.5	5.6	4.7	4.0	3.2	3.4
		M/F		*93*	*105*	*104*	*103*	*100*	*92*	*94*	*97*	*96*	*94*	*91*	*87*	*84*	*82*	*81*	*76*	*67*
1.12.1960	C	M	2663	100.0	8.4	7.9	8.2	8.2	7.8	7.9	7.3	7.0	6.1	6.4	6.3	5.6	4.5	3.4	2.4	2.8
		F	2766	100.0	7.8	7.3	7.5	7.6	7.2	7.1	6.9	6.9	5.9	6.3	6.5	6.1	5.3	4.3	3.2	4.2
		M/F		*96*	*105*	*105*	*104*	*104*	*105*	*107*	*101*	*98*	*99*	*97*	*93*	*88*	*82*	*76*	*72*	*65*
1.12.1970	C	M	3089	100.0	8.1	8.4	7.7	7.4	8.4	8.7	7.6	7.0	6.4	6.0	5.1	5.1	4.7	3.8	2.6	2.9
		F	3180	100.0	7.5	7.9	7.2	6.9	8.0	7.9	6.8	6.4	6.2	6.0	5.1	5.3	5.3	4.7	3.8	4.8
		M/F		*97*	*105*	*104*	*104*	*105*	*102*	*107*	*108*	*105*	*100*	*97*	*96*	*92*	*85*	*78*	*68*	*58*
United Kingdom																				
8.4.1951	C	M	24118	100.0	9.2	7.8	7.0	6.5	6.8	7.7	7.2	7.7	7.8	7.3	6.2	5.1	4.4	3.7	2.8	2.8
		F	26107	100.0	8.1	6.9	6.2	6.2	6.7	7.3	6.8	7.4	7.4	7.0	6.6	5.8	5.2	4.5	3.6	4.2
		M/F		*92*	*105*	*104*	*103*	*97*	*95*	*98*	*96*	*96*	*97*	*96*	*87*	*82*	*78*	*75*	*71*	*63*
23.4.1961	C	M	25481	100.0	8.5	7.7	8.7	7.3	6.4	6.5	6.7	7.2	6.6	7.0	7.0	6.2	4.9	3.6	2.7	3.0
		F	27229	100.0	7.5	6.8	7.7	6.7	6.1	5.9	6.2	6.8	6.4	6.9	6.9	6.3	5.7	4.8	3.9	5.3
		M/F		*94*	*105*	*105*	*105*	*102*	*99*	*102*	*101*	*99*	*96*	*96*	*95*	*92*	*80*	*71*	*64*	*54*

APPENDIX TABLE A.II.1 *(concluded)*

Distributions of population by sex and age, and sex ratios, around 1950, 1960 and 1970

(Thousands, percentages and numbers of men per 100 women)

Country and date	Type of data[a]	Sex	Absolute numbers (thousands)	All ages	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
25.4.1971	C	M	26 894	100.0	9.1	8.9	8.0	7.3	7.9	6.7	6.1	5.9	6.2	6.5	5.8	6.0	5.5	4.4	2.8	3.0
		F	28 471	100.0	8.1	8.0	7.1	6.6	7.4	6.2	5.6	5.5	5.9	6.3	5.8	6.1	5.9	5.2	4.2	6.0
		M/F		*95*	*105*	*105*	*106*	*105*	*101*	*102*	*103*	*102*	*99*	*98*	*95*	*93*	*88*	*79*	*63*	*47*
USSR																				
15.1.1959	C	M	94 050	100.0	11.4	13.7	11.8	5.4	10.7	9.5	9.2	4.8	4.2	5.0	4.3	3.1	2.5	1.9	1.4	1.3
		F	114 776	100.0	9.1	10.8	9.4	4.3	9.0	8.1	9.0	6.1	5.6	6.8	5.6	5.0	3.8	2.9	2.3	2.4
		M/F		*82*	*104*	*104*	*103*	*103*	*98*	*96*	*83*	*64*	*62*	*61*	*62*	*50*	*54*	*53*	*50*	*30*
15.1.1970	C	M	111 399	100.0	9.4	11.2	13.6	7.9	7.7	6.1	9.3	7.3	7.9	4.3	3.1	3.8	3.1	2.3	1.6	1.4
		F	130 321	100.0	7.7	9.2	11.2	6.5	6.5	5.3	8.2	6.5	7.9	5.8	4.3	5.9	5.0	4.0	2.8	3.0
		M/F		*86*	*104*	*104*	*104*	*104*	*102*	*98*	*97*	*96*	*86*	*63*	*61*	*55*	*53*	*48*	*48*	*38*
Yugoslavia																				
30.6.1950	E	M	7 785	100.0	11.6	9.8	11.5	11.5	9.0	7.5	4.2	6.2	6.7	5.8	4.5	3.2	2.7	2.2	1.4	1.4
		F	8 363	100.0	10.4	8.8	10.3	10.4	9.7	8.6	4.7	6.6	6.5	5.7	4.8	3.8	3.4	2.7	1.8	1.7
		M/F		*93*	*103*	*104*	*104*	*103*	*95*	*81*	*82*	*88*	*96*	*96*	*86*	*78*	*74*	*75*	*75*	*76*
31.3.1961	C	M	9 043	100.0	11.0	11.3	10.4	7.7	8.8	9.1	8.5	6.2	3.8	4.7	5.3	4.5	3.4	2.0	1.5	1.7
		F	9 506	100.0	10.0	10.3	9.4	7.2	8.2	8.7	8.3	7.2	4.4	5.2	5.1	4.6	3.9	2.6	2.1	2.4
		M/F		*95*	*105*	*105*	*104*	*102*	*102*	*100*	*97*	*83*	*83*	*86*	*94*	*93*	*84*	*75*	*67*	*66*
31.3.1971	C	M	10 077	100.0	9.1	9.3	9.5	10.1	8.9	6.4	7.6	8.0	7.3	5.4	3.2	3.8	4.1	3.1	2.0	1.7
		F	10 446	100.0	8.4	8.6	8.8	9.3	8.2	6.1	7.3	7.6	7.3	6.4	3.8	4.4	4.5	3.5	2.6	2.7
		M/F		*97*	*105*	*105*	*105*	*104*	*105*	*101*	*100*	*100*	*96*	*81*	*81*	*82*	*89*	*85*	*75*	*61*

Sources: Census data and official national estimates.

[a] C = Census; E Estimate.

[b] Average of 1956 and 1960 census data.

Appendix table A.II.2

Locality-size distribution of population, in 25 countries, about 1950, 1960 and 1970

(Percentages)

Region and country, year, locality type [a]	Total	Over 100,000	50,000 to 100,000	20,000 to 50,000	10,000 to 20,000	5,000 to 10,000	2,000 to 5,000	Under 2,000	Other [b]
Eastern Europe									
Bulgaria									
1946 (*b*)	100.0	8.0	1.9	5.4	4.6	3.4	1.4		75.3
1956 (*a*)	100.0	12.2	—— 10.3 ——		7.1	7.0	20.4	43.0	–
1965 (*b*)	100.0	17.5	8.0	8.5	4.8	7.9	17.1	36.2	–
Czechoslovakia									
1947 (*c*)	100.0	13.7	2.3	5.0	6.2	6.9	14.6	51.3	–
1961 (*c*)	100.0	14.1	4.0	7.2	7.2	8.6	16.4	42.5	–
1970 (*c*)	100.0	15.8	6.5	8.8	8.0	8.3	15.0	37.6	–
German Democratic Republic									
1946 (*c*)	100.0	13.4	6.0	12.3	9.0	10.7	14.1	34.5	–
1961 (*c*)	100.0	30.8	6.6	10.2	7.4	9.3	12.5	23.2	–
1971 (*c*)	100.0	22.0	6.8	15.3	9.4	8.5	11.8	26.2	–
Hungary									
1960 (*c*)	100.0	22.0	5.6	9.8	9.3	11.1	21.8	20.4	–
1970 (*c*)	100.0	26.4	5.8	11.5	9.6	10.1	17.3	19.3	–
Poland									
1946 (*b*)	100.0	10.2	3.3	5.0	4.0	4.0	3.9	1.0	68.6
1960 (*b*)	100.0	20.8	4.3	6.8	6.3	5.6	3.3	0.9	52.0
1970	..	..	..	..	..	..	..	..	..
Romania									
1948 (*c*)	100.0	8.0	5.3	3.8	3.9	5.0	20.0	54.0	–
1956 (*c*)	100.0	11.6	3.7	4.1	5.7	13.2	52.0	9.7	–
1966 (*b*)	100.0	16.5	2.8	6.7	5.4	14.8	44.9	8.9	–
Northern Europe									
Denmark									
1950 (*a*)	100.0	33.5	3.2	8.1	6.6	4.3	3.1	8.5	32.7
1960 (*a*)	100.0	34.2	4.6	9.7	6.2	4.0	3.8	11.5	26.0
1970 (*a*)	100.0	36.8	2.5	12.0	6.2	3.4	5.9	13.1	20.1
Finland									
1950 (*b*)	100.0	14.2	0.0	8.0	6.0	3.4	3.5	6.4	58.5
1960 (*a*)	100.0	16.0	—— 8.0 ——		8.2	3.5	6.5	13.7	44.1
1970 (*a*)	100.0	—— 25.3 ——		9.2	6.3	4.2	7.3	11.8	35.9
Ireland									
1951 (*a*)	100.0	17.6	6.0	4.6	4.0	3.3	5.0	7.8	51.7
1961 (*a*)	100.0	25.2	4.2	2.6	3.5	3.8	5.7	10.3	44.7
1971 (*b*)	100.0	27.3	5.4	3.6	3.9	5.1	5.9	7.6	41.2
Norway									
1950 (*a*)	100.0	20.0	6.2	6.7	5.7	1.9	3.8	8.0	47.7
1960 (*a*)	100.0	20.2	6.1	8.5	6.2	3.0	4.8	8.4	42.8
1970	..	..	..	..	..	..	..	..	..
Sweden									
1950 (*a*)	100.0	19.4	6.0	7.5	7.3	5.1	6.5	14.3	33.9
1960 (*a*)	100.0	21.7	9.2	9.9	7.2	6.4	6.6	11.8	27.2
1970 (*a*)	100.0	21.3	12.8	12.4	10.2	5.8	8.2	10.7	18.6
United Kingdom:									
England and Wales									
1951 (*a*)	100.0	51.9	7.6	11.3	6.9	5.1	6.3	10.9	–
1961 (*b*)	100.0	36.1[c]	17.2[c]	16.0[c]	6.9[c]	2.6[c]	1.1[c]	0.1[c]	20.0[c]
1970	..	..	..	..	..	..	..	..	..

APPENDIX TABLE A.II.2 (*continued*)

Locality-size distribution of population, in 25 countries, about 1950, 1960 and 1970

(*Values in percentage*)

Region and country, year, locality type [a]	*Total*	*Over 100,000*	*50,000 to 100,000*	*20,000 to 50,000*	*10,000 to 20,000*	*5,000 to 10,000*	*2,000 to 5,000*	*Under 2,000*	*Other* [b]
Northern Europe (continued)									
Northern Ireland									
1951 (*b*)	100.0	32.4	3.6	1.5	8.1	4.6	3.9	6.1	39.8
1961 (*b*)	100.0	29.2	3.8	4.3	9.3	3.8	3.4	0.2	46.0
1966 (*b*)	100.0	37.0	3.8	6.1	6.3	4.4	4.6	7.3	30.5
Scotland									
1951 (*b*)	100.0	37.6	4.7	12.1	6.9	8.0	9.6	4.0	17.1
1961 (*b*)	100.0	36.5	6.7	10.1	6.4	6.1	3.2	1.4	29.6
1970	. .	. .	. .	. .	. .	. .	. .	. .	. .
Western Europe									
Austria									
1951 (*c*)	100.0	32.9	2.3	4.6	3.2	6.2	16.4	34.4	–
1961 (*c*)	100.0	32.1	1.0	5.1	4.6	7.2	17.4	32.6	–
1971 (*c*)	100.0	31.0	1.0	5.7	6.1	8.0	22.2	26.0	–
Belgium									
1947 (*c*)	100.0	10.5	7.4	14.1	14.6	16.1	19.6	17.7	–
1961 (*c*)	100.0	9.3	8.4	16.6	14.8	17.2	18.5	15.2	–
1970 (*c*)	100.0	10.6	7.5	18.4	17.2	17.2	17.5	11.6	–
France									
1946 (*c*)	100.0	16.3	5.4	9.7	7.5	8.0	13.1	40.0	–
1962 (*c*)	100.0	18.0	6.9	12.4	8.5	8.5	12.1	33.6	–
1968 (*c*)	100.0	41.2	—— 14.0 ——		—— 14.7 ——			30.1	–
Germany, Federal Republic of									
1950 (*c*)	100.0	27.1	5.6	8.8	7.1	8.9	13.6	28.9	–
1961 (*c*)	100.0	30.8	6.6	10.2	7.4	9.3	12.5	23.2	–
1970 (*c*)	100.0	32.4	7.0	11.8	9.4	9.5	11.2	18.7	–
Netherlands									
1947 (*a*)	100.0	32.7	8.6	8.5	6.3	7.5	8.9	17.4	10.1
1960 (*c*)	100.0	35.4	8.3	8.1	7.9	7.9	8.4	14.7	9.2
1970	. .	. .	. .	. .	. .	. .	. .	. .	. .
Switzerland									
1950 (*c*)	100.0	20.6	4.1	4.4	7.3	11.7	20.0	31.9	–
1960 (*c*)	100.0	20.5	5.2	4.4	11.9	12.2	18.8	27.0	–
1970 (*c*)	100.0	17.7	4.9	9.3	13.4	13.4	19.0	22.3	–
Southern Europe									
Greece									
1951 (*c*)	100.0	12.7	3.5	11.9	8.2	5.7	13.4	44.6	–
1961 (*a*)	100.0	27.7	2.3	7.4	4.6	3.2	8.9	43.1	2.8
1970	. .	. .	. .	. .	. .	. .	. .	. .	. .
Italy									
1951 (*c*)	100.0	20.4	7.6	13.2	14.2	18.4	19.2	7.0	–
1961 (*c*)	100.0	24.8	8.7	13.6	13.0	15.8	17.0	7.1	–
1971 (*c*)	100.0	29.2	8.0	15.2	12.4	13.8	14.4	7.0	–
Portugal									
1950 (*a*)	100.0	12.7	–	3.7	3.0	5.2	6.6	–	68.8
1960 (*a*)	100.0	12.4	—— 4.0 ——		5.9	4.7	6.9	–	66.1
1970	. .	. .	. .		. .	. .	. .	. .	. .

Appendix table A.II.2 *(concluded)*

Locality-size distribution of population, in 25 countries, about 1950, 1960 and 1970

(*Values in percentage*)

Region and country, year, locality type [a]	*Total*	*Over 100,000*	*50,000 to 100,000*	*20,000 to 50,000*	*10,000 to 20,000*	*5,000 to 10,000*	*2,000 to 5,000*	*Under 2,000*	*Other* [b]
Spain									
1950 (*c*)	100.0	24.1	6.2	9.5	12.0	14.5	16.8	16.9	–
1960 (*c*)	100.0	27.9	7.5	10.0	11.2	14.4	14.5	14.5	–
1970 (*c*)	100.0	36.2	6.9	12.1	11.1	11.2	11.4	11.1	–
Yugoslavia									
1948 (*c*)	100.0	6.3	1.9	4.1	3.1	1.0	0.0	–	83.6
1961 (*c*)	100.0	9.0	2.8	6.9	4.2	6.3	12.0	58.8	–
1971 (*c*)	100.0	12.6	4.1	9.2	4.5	6.8	11.9	50.9	–

Source: United Nations, *Demographic Yearbook*, various years.

[a] Type (*a*) denotes agglomerations or clusters of population without regard to official boundaries or administrative functions. Type (*b*) denotes localities with fixed boundaries, commonly under local or urban governments. Type (*c*) denotes use of administrative subdivisions having fixed boundaries and comprising the entire country.

[b] Including remaining areas, if any, plus unknown cases.

[c] Distribution appears significantly affected by change in locality type between 1950 and 1960; large rise in the percentage "Other" seems associated with fall in the percentage over 100,000 and in localities between 2,000 and 10,000.

APPENDIX TABLE A.III.1

Expectation of life at birth and ages 30 and 65, by sex, about 1900, 1930, 1950, 1960 and 1970

Region and country	Males					Females				
	1900	1930	1950	1960	1970	1900	1930	1950	1960	1970
					At birth					
Eastern Europe										
Bulgaria	40.0	45.9	60.7	67.8	69.1	40.3	46.6	63.8	71.4	73.5
Czechoslovakia	38.9	51.9	60.9	67.6	66.3	41.7	55.2	65.5	73.1	73.2
German Democratic Republic	44.8	59.9	63.0	66.5	68.2	48.3	62.8	65.9	71.4	73.4
Hungary	37.1	48.3	58.8	65.2	66.3	37.9	51.3	63.2	69.6	72.1
Poland	..	48.2	55.3	64.8	66.6	..	51.4	61.0	70.5	73.4
Romania	..	..	56.1	64.2	65.7	..	..	61.2	67.7	70.4
Northern Europe										
Denmark	52.9	61.5	69.8	70.3	71.0	56.2	63.2	72.6	74.4	76.1
Finland	45.3	52.6	62.9	64.9	65.7	48.1	57.4	69.1	71.6	73.6
Ireland	49.3	57.8	64.5	68.1	68.6	49.6	58.8	67.0	71.9	73.2
Norway	54.8	62.5	71.1	71.1	71.0	57.7	65.7	74.7	74.7	77.5
Sweden	54.5	62.4	70.3	71.2	72.3	57.0	64.6	72.7	74.7	77.4
United Kingdom:										
England and Wales	48.5	58.7	66.5	68.3	68.8	52.4	62.9	71.2	74.1	75.2
Northern Ireland	47.1	56.6	65.5	67.4	67.7	46.7	57.7	68.8	72.1	73.6
Scotland	45.0	56.0	64.5	66.4	67.0	47.8	59.5	68.3	71.9	73.3
Western Europe										
Austria	39.1	54.5	61.9	65.6	66.3	41.1	58.5	67.0	72.0	73.5
Belgium	45.4	56.0	62.0	67.7	68.4	48.8	59.8	67.3	73.5	74.5
France	45.3	54.3	63.6	67.2	69.1	48.7	59.0	69.3	73.8	76.7
Germany, Federal Republic of	44.8	59.9	64.6	66.7	67.3	48.3	62.8	68.5	71.9	73.6
Netherlands	51.0	63.7	70.6	71.4	70.7	53.4	65.4	72.9	74.8	76.5
Switzerland	49.3	59.2	66.4	68.7	70.0	52.2	63.1	70.9	74.1	76.0
Southern Europe										
Albania	..	..	52.6	63.7	66.1	..	..	54.4	66.0	68.0
Greece	..	44.9	..	67.5	..	..	47.5	..	70.7	..
Italy	44.2	53.8	63.8	67.2	68.5	44.8	56.0	67.3	72.3	74.6
Portugal	..	..	55.5	60.7	65.3	..	..	60.5	66.4	71.0
Spain	33.9	48.4	58.8	67.3	69.0	35.7	51.6	63.5	71.9	74.4
Yugoslavia	..	50.1	56.4	62.2	65.1	..	54.2	58.5	65.3	69.9
USSR	..	42	58.2	65.0	66	..	47	63.3	72.6	74
					Age 30					
Eastern Europe										
Bulgaria	36.7	38.4	42.6	43.0	42.6	36.0	39.9	45.0	45.6	46.1
Czechoslovakia	33.0	37.2	39.6	41.2	39.7	34.8	39.2	43.0	45.6	45.8
German Democratic Republic	34.6	39.5	41.5	41.8	41.0	36.9	41.0	44.2	45.5	45.6
Hungary	..	36.0	39.6	40.9	40.8	..	38.3	42.7	44.2	45.6
Poland	..	36.0	38.9	41.1	41.2	..	38.0	43.0	45.5	47.1
Romania	..	..	..	..	41.5	..	..	..	..	45.2
Northern Europe										
Denmark	37.4	40.9	43.6	43.3	43.6	39.6	41.6	45.3	46.5	48.3
Finland	34.9	35.5	37.7	38.6	38.4	37.3	39.4	43.1	44.4	45.8
Ireland	..	38.5	40.2	41.7	41.3	..	38.9	42.2	44.6	45.4
Norway	38.8	40.9	44.8	43.9	43.5	40.2	42.8	47.3	47.9	49.2
Sweden	38.6	40.8	43.0	44.0	44.4	40.2	42.0	44.6	46.6	49.1
United Kingdom:										
England and Wales	34.8	38.2	40.5	41.3	41.2	37.4	41.2	44.6	46.4	47.2
Northern Ireland	..	37.5	40.4	40.8	40.7	..	37.4	42.9	44.7	46.0
Scotland	..	37.4	39.4	39.8	39.7	..	39.8	42.7	44.5	45.5

APPENDIX TABLE A.III.1 (*continued*)

Expectation of life at birth and ages 30 and 65, by sex, about 1900, 1930, 1950, 1960 and 1970

Region and country	*Males*					*Females*				
	1900	*1930*	*1950*	*1960*	*1970*	*1900*	*1930*	*1950*	*1960*	*1970*
Western Europe										
Austria	33.3	36.9	39.7	40.5	40.2	34.2	39.6	43.4	45.6	46.1
Belgium	34.2	37.8	39.3	40.9	40.7	37.0	40.2	43.2	45.9	46.6
France	33.9	35.4	39.3	40.5	41.4	36.4	39.5	44.1	46.4	48.7
Germany, Federal Republic of	34.6	39.5	41.3	41.1	40.7	36.9	41.0	43.9	45.5	46.3
Netherlands	37.8	41.4	44.3	44.2	43.4	38.8	41.7	45.7	46.9	48.8
Switzerland	33.8	37.0	41.0	42.2	43.1	36.1	40.0	44.4	46.5	48.6
Southern Europe										
Albania	..	..	41.7	43.5	..	..	..	45.2	47.4	..
Greece	..	36.3	..	44.0	45.1	..	39.3	..	46.2	48.8
Italy	35.9	38.6	41.2	42.3	42.1	36.6	40.4	44.0	46.4	47.7
Portugal	..	..	38.6	40.7	41.4	..	..	43.2	45.4	46.0
Spain	31.9	35.4	39.1	42.0	42.4	33.3	38.3	43.3	45.8	47.0
Yugoslavia	..	36.5	39.4	41.0	40.7	..	38.4	41.6	43.9	45.1
USSR	..	..	..	..	39.2	..	..	..	..	48.1
Eastern Europe					*Age 65*					
Bulgaria	14.8	13.5	13.4	13.5	13.1	14.6	13.9	14.5	14.7	14.9
Czechoslovakia	10.1	11.3	..	12.3	11.6	10.5	12.1	..	14.5	14.9
German Democratic Republic	10.4	11.9	12.6	12.7	11.8	11.1	12.6	13.9	14.6	14.6
Hungary	..	10.5	12.6	12.0	12.1	..	11.6	13.9	13.6	14.8
Poland	..	10.8	11.7	12.6	12.9	..	12.0	13.7	14.8	16.2
Romania	..	..	..	..	12.6	..	..	..	..	14.2
Northern Europe										
Denmark	11.9	12.6	13.9	13.5	14.0	13.0	12.9	14.6	15.4	17.5
Finland	10.8	11.6	11.0	11.5	11.4	11.9	12.8	13.1	13.8	14.6
Ireland	10.8	12.6	12.1	12.6	12.3	10.6	13.3	13.3	14.4	15.0
Norway	13.5	13.7	14.9	14.1	14.0	14.4	14.7	16.0	16.0	17.4
Sweden	12.8	13.2	13.5	13.9	14.4	13.7	13.7	14.3	15.2	17.6
United Kingdom:										
England and Wales	10.8	11.3	12.0	12.2	12.0	12.0	13.1	14.4	15.4	16.3
Northern Ireland	10.5	11.7	12.1	12.0	12.0	10.4	12.5	13.5	14.2	15.4
Scotland	..	11.0	11.9	11.6	11.4	..	12.6	13.5	14.1	15.4
Western Europe										
Austria	10.1	11.2	12.0	12.2	11.7	10.2	12.1	13.6	14.8	15.2
Belgium	10.6	11.4	12.3	12.4	12.0	11.6	12.6	13.9	14.8	15.6
France	10.5	10.9	11.9	12.5	13.1	11.5	12.6	14.4	15.6	17.6
Germany, Federal Republic of	10.4	11.9	12.8	12.3	11.8	11.1	12.6	13.7	14.5	15.4
Netherlands	11.6	12.7	14.1	14.1	13.8	12.3	13.2	14.7	15.4	17.3
Switzerland	10.1	11.0	12.4	12.9	13.8	10.7	12.1	14.0	15.2	17.1
Southern Europe										
Albania	..	..	13.8	14.7	..	..	..	16.2	16.8	..
Greece	..	11.9	..	13.5	14.9	..	13.9	..	15.1	17.0
Italy	10.7	11.9	12.6	13.4	13.0	10.8	12.7	13.7	15.3	16.5
Portugal	..	..	11.9	12.4	12.6	..	..	14.0	14.6	14.8
Spain	9.0	10.3	12.0	12.8	13.2	9.2	11.6	14.0	14.8	15.7
Yugoslavia	..	11.2	11.9	12.1	12.2	..	11.7	13.0	13.8	14.4
USSR	..	..	..	..	13.4	..	..	..	..	17.8

APPENDIX TABLE A.III.2

Quinquennial crude death rates, 1901-1970

(5-year average number of deaths per 1,000 population)

Region and country	*1901-1905*	*1906-1910*	*1911-1915*	*1916-1920*	*1921-1925*	*1926-1930*	*1931-1935*	*1936-1940*	*1941-1945*	*1946-1950*	*1951-1955*	*1956-1960*	*1961-1965*	*1966-1970*
Eastern Europe														
Bulgaria	22.5	23.7	22.3	23.1	20.8	17.9	15.5	13.7	13.5	12.3	10.0	8.7	8.2	8.9
Czechoslovakia	24.2	21.6	20.1	19.5	15.9	15.0	13.6	13.4	14.3	12.2	10.5	9.6	9.7	10.7
German Democratic Republic	..	..	..	..	..	..	..	11.6	..	16.4	11.7	12.7	13.1	13.7
Hungary	25.6	24.0	22.9	21.7	19.9	17.0	15.8	14.1	16.4	12.5	11.1	10.3	10.2	11.0
Poland	25.5	22.3	21.7	27.0	18.5	16.7	14.7	14.1	..	11.2	10.7	8.6	7.6	7.8
Romania	25.7	26.0	24.5	28.4	23.1	21.2	20.0	18.9	18.9	16.5	11.5	9.5	8.6	9.3
Northern Europe														
Denmark	14.8	13.7	12.8	13.1	11.2	11.1	10.9	10.5	10.0	9.3	8.9	9.2	9.8	9.9
Finland	19.2	18.2	17.1	20.8	15.1	14.8	13.3	14.6	16.0	11.2	9.5	9.0	9.3	9.5
Ireland	17.1	16.8	16.6	16.7	14.5	14.4	14.0	14.3	14.7	13.3	12.5	11.8	11.8	11.5
Norway	14.6	13.9	13.4	14.2	11.5	11.0	10.4	10.3	10.4	9.1	8.5	8.9	9.5	9.8
Sweden	15.5	14.3	14.0	14.5	12.1	12.1	11.6	11.7	10.6	10.2	9.6	9.7	10.0	10.2
United Kingdom	16.3	15.0	14.4	14.1	12.4	12.3	12.3	12.6	12.0	11.6	11.7	11.6	11.8	11.7
Western Europe														
Austria	22.0	20.3	19.2	21.9	15.8	14.5	13.5	14.1	16.5	12.8	12.2	12.6	12.6	13.0
Belgium	17.0	15.9	14.6	15.8	13.4	13.7	13.0	13.9	14.8	13.0	12.2	11.9	12.0	12.3
France	19.6	19.2	18.2	18.8	17.2	16.8	15.7	15.8	16.6	13.1	12.5	11.6	11.1	11.1
Germany, Federal Republic of	..	..	..	..	..	..	..	11.4	..	11.1	10.8	11.1	11.1	11.6
Netherlands	16.1	14.3	12.8	13.9	10.6	9.9	8.9	8.9	11.3	7.9	7.6	7.6	7.9	8.2
Switzerland	17.5	16.0	14.3	14.9	12.5	12.1	11.8	11.6	11.3	10.9	10.1	9.8	9.5	9.2
Southern Europe														
Albania	..	..	..	..	..	..	16.3	17.1	15.7	15.8	14.3	11.4	9.8	8.5
Greece	..	..	..	..	15.4	16.4	16.5	14.0	17.1	9.3	7.1	7.4	7.9	8.2
Italy	22.0	21.2	19.7	24.3	17.4	16.0	14.1	13.8	14.6	10.9	9.8	9.7	9.9	9.8
Portugal	19.9	20.0	20.5	26.9	20.4	18.4	16.9	15.7	15.7	13.6	11.7	11.3	10.7	10.2
Spain	26.1	24.1	22.3	24.7	20.3	18.0	16.5	18.0	12.2	11.7	9.9	9.2	8.8	8.7
Yugoslavia	..	..	..	..	20.2	20.0	18.0	15.6	..	13.2	12.1	10.2	9.2	8.8
USSR	30.9	29.6	29.1	27.6	..	22.6	..	18.0	..	9.7	9.1	7.5	..	7.8

APPENDIX TABLE A.III.3

Annual crude death rates, 1946-1973

(Annual number of deaths per 1,000 population)

Region and country	*1946*	*1947*	*1948*	*1949*	*1950*	*1951*	*1952*	*1953*	*1954*	*1955*	*1956*	*1957*	*1958*	*1959*
Eastern Europe														
Bulgaria	13.7	13.4	12.6	11.7	10.2	10.7	11.6	9.3	9.2	9.1	9.4	8.6	7.9	9.5
Czechoslovakia	14.1	12.1	11.5	11.9	11.5	11.4	10.6	10.5	10.4	9.6	9.6	10.1	9.3	9.7
German Democratic Republic	22.7	18.8	15.2	13.3	11.8	11.2	11.9	11.5	12.0	11.7	11.8	12.6	12.5	13.1
Hungary	15.0	12.9	11.6	11.4	11.4	11.7	11.3	11.7	11.0	10.0	10.5	10.5	9.9	10.5
Poland	10.2	10.9	11.2	11.6	11.6	12.4	11.1	10.2	10.3	9.6	9.0	9.5	8.4	8.6
Romania	18.8	22.0	15.6	13.7	12.4	12.8	11.7	11.6	11.5	9.7	9.9	10.2	8.7	10.2
Northern Europe														
Denmark	10.2	9.7	8.6	8.9	9.2	8.8	9.0	9.0	9.1	8.7	8.9	9.3	9.2	9.3
Finland	11.8	11.9	11.2	11.2	10.2	10.0	9.5	9.6	9.1	9.3	9.0	9.4	8.9	8.8
Ireland	14.0	14.8	12.2	12.8	12.7	14.3	11.9	11.7	12.1	12.6	11.7	11.9	12.0	12.0
Norway	9.4	9.5	8.9	9.0	9.1	8.4	8.5	8.5	8.6	8.5	8.7	8.8	9.0	8.9
Sweden	10.5	10.8	9.8	10.0	10.0	9.9	9.6	9.7	9.6	9.5	9.6	9.9	9.6	9.5
United Kingdom	11.7	12.1	10.9	11.7	11.8	12.6	11.4	11.4	11.4	11.7	11.7	11.5	11.7	11.7
Western Europe														
Austria	13.4	13.0	12.1	12.9	12.4	12.7	12.0	12.0	12.2	12.2	12.5	12.8	12.3	12.5
Belgium	13.6	13.3	12.6	12.9	12.5	12.6	11.9	12.1	11.9	12.3	12.2	12.0	11.7	11.4
France	13.5	13.1	12.4	13.7	12.7	13.3	12.3	12.9	12.0	12.0	12.4	11.9	11.1	11.2
Germany, Federal Republic of	12.5	11.8	10.4	10.3	10.5	10.7	10.6	11.2	10.6	11.0	11.2	11.3	10.8	10.8
Netherlands	8.5	8.1	7.4	8.1	7.5	7.6	7.4	7.7	7.5	7.6	7.8	7.5	7.6	7.6
Switzerland	11.3	11.4	10.8	10.7	10.1	10.5	9.9	10.2	10.0	10.1	10.2	10.0	9.5	9.6
Southern Europe														
Albania	..	..	..	..	14.1	15.2	15.6	13.7	13.1	15.1	11.5	11.8	9.3	9.8
Greece	9.9	9.3	12.4	7.9	7.1	7.5	6.9	7.3	7.0	6.9	7.4	7.6	7.1	7.4
Italy	12.1	11.5	10.7	10.5	9.8	10.3	10.1	10.0	9.2	9.3	10.3	9.9	9.3	9.2
Portugal	14.9	13.5	13.0	14.1	12.2	12.5	11.8	11.4	11.1	11.6	12.4	11.7	10.5	11.1
Spain	13.0	12.1	11.1	11.6	10.9	11.6	9.7	9.7	9.2	9.4	9.9	9.9	8.7	8.9
Yugoslavia	..	12.7	13.5	13.5	13.0	14.1	11.8	12.4	10.9	11.4	11.2	10.7	9.3	9.9
USSR	..	..	..	..	9.7	9.7	9.4	9.1	8.9	8.2	7.6	7.8	7.2	7.6

APPENDIX TABLE A.III.3 (*continued*)

Annual crude death rates, 1946-1973

(*Annual number of deaths per 1,000 population*)

Region and country	*1960*	*1961*	*1962*	*1963*	*1964*	*1965*	*1966*	*1967*	*1968*	*1969*	*1970*	*1971*	*1972*	*1973*
Eastern Europe														
Bulgaria	8.1	7.9	8.7	8.2	7.9	8.2	8.3	9.0	8.6	9.5	9.1	9.7	9.8	4.4
Czechoslovakia	9.2	9.2	10.0	9.5	9.6	10.0	10.0	10.1	10.7	11.2	11.4	11.5	11.1	12.7
German Democratic Republic	13.3	12.8	13.5	12.7	13.1	13.3	13.0	13.1	14.0	14.3	14.1	13.8	13.7	15.3
Hungary	10.2	9.6	10.8	9.9	10.0	10.7	10.0	10.7	11.2	11.3	11.7	11.9	11.4	12.3
Poland	7.6	7.6	7.9	7.5	7.6	7.4	7.3	7.8	7.6	8.1	8.2	8.7	8.0	8.6
Romania	8.7	8.7	9.2	8.3	8.1	8.6	8.2	9.3	9.6	10.1	9.5	9.5	9.2	9.8
Northern Europe														
Denmark	9.5	9.4	9.8	9.8	9.9	10.1	10.3	9.9	9.7	9.7	9.8	9.9	10.1	10.1
Finland	9.0	9.1	9.5	9.2	9.3	9.6	9.4	9.4	9.6	9.8	9.5	10.0	9.6	9.3
Ireland	11.5	12.3	12.0	11.9	11.4	11.5	12.2	10.8	11.4	11.5	11.4	10.6	11.2	11.0
Norway	9.1	9.2	9.4	10.1	9.5	9.5	9.6	9.6	9.9	10.1	9.8	10.0	10.0	10.1
Sweden	10.0	9.8	10.2	10.1	10.0	10.1	10.0	10.1	10.4	10.5	10.0	10.2	10.4	10.4
United Kingdom	11.5	12.0	11.9	12.2	11.3	11.5	11.8	11.2	11.9	11.9	11.8	11.6	12.1	12.4
Western Europe														
Austria	12.7	12.1	12.7	12.8	12.3	13.0	12.5	13.0	13.0	13.3	13.4	13.1	12.7	12.6
Belgium	12.4	11.6	12.2	12.6	11.7	12.1	12.0	12.0	12.6	12.4	12.3	12.3	12.0	12.1
France	11.3	10.8	11.4	11.6	10.7	11.1	10.7	10.9	11.0	11.3	10.6	10.8	10.6	12.5
Germany, Federal Republic of	11.4	11.0	11.1	11.4	10.8	11.2	11.3	11.2	11.9	12.0	11.7	11.9	11.8	12.2
Netherlands	7.6	7.6	8.0	8.0	7.7	8.0	8.1	7.9	8.3	8.3	8.4	8.4	8.5	9.1
Switzerland	9.7	9.3	9.7	9.9	9.1	9.3	9.3	9.0	9.3	9.2	9.1	9.1	8.8	9.5
Southern Europe														
Albania	10.4	9.3	10.7	10.0	8.7	9.0	8.6	8.4	8.0	7.5	9.3	8.1	. .	7.9
Greece	7.3	7.6	7.9	7.9	8.2	7.9	7.9	8.3	8.3	8.1	8.4	8.3	8.6	8.5
Italy	9.7	9.4	10.1	10.2	9.6	10.0	9.6	9.7	10.1	10.1	9.7	9.6	9.6	11.9
Portugal	10.8	11.2	10.8	10.8	10.6	10.3	10.8	10.2	10.0	10.4	9.7	11.0	10.0	11.3
Spain	8.8	8.6	9.0	9.1	8.7	8.7	8.6	8.7	8.7	9.2	8.5	8.9	8.4	10.7
Yugoslavia	9.9	9.0	9.9	8.9	9.4	8.8	8.1	8.8	8.7	9.3	9.0	8.7	9.1	8.7
USSR	7.1	7.2	7.5	7.2	6.9	7.3	7.3	7.6	7.7	8.1	8.2	8.2	8.5	8.7

APPENDIX TABLE A.III.4

Age-specific death rates, by sex, in nine countries, about 1950, 1960 and 1970

(Rates per 100,000 population in sex-age group)

Region, country and age	Males 1950	Males 1960	Males 1970	Females 1950	Females 1960	Females 1970
Eastern Europe						
Hungary						
Under 1	10817	5404	4098	8649	4319	3184
1-4	461	169	115	418	151	95
5-14	135	58	46	115	34	30
15-24	280	135	129	230	68	47
25-44	445	229	273	317	160	134
45-64	1571	1329	1384	1101	843	772
65-74	4903	4898	5284	4147	3642	3353
75+	13850	14036	14010	12723	11921	11803
Poland						
Under 1	12939	6503	3797	10357	5143	2923
1-4	1184	175	118	990	162	93
5-14	152	60	50	117	39	34
15-24	307	170	125	207	71	49
25-44	473	271	289	325	163	126
45-64	1762	1332	1399	1072	776	710
65-74	5825	4577	4917	4198	3104	2980
75+	14286	11775	11845	12346	9749	9751
Northern Europe						
England and Wales						
Under 1	3419	2483	2071	2622	1910	1586
1-4	142	95	79	127	78	64
5-14	66	45	38	47	30	26
15-24	121	103	94	95	40	40
25-44	230	176	162	188	124	112
45-64	1532	1424	1396	894	746	727
65-74	5333	5261	5344	3470	2947	2779
75+	13676	13516	13792	11480	10438	10000
Sweden						
Under 1	2469	1913	1265	1878	1428	939
1-4	135	95	64	110	78	41
5-14	65	44	40	42	29	29
15-24	123	97	102	71	43	47
25-44	195	169	175	147	110	100
45-64	1045	987	963	805	651	554
65-74	3842	3945	3690	3266	2862	2214
75+	12641	12053	11072	12136	10811	8924
Western Europe						
France						
Under 1	5480	2665	1719	4199	2021	1322
1-4	249	131	90	219	107	69
5-14	74	43	46	56	30	30
15-24	148	106	138	106	56	57
25-44	336	251	260	231	143	125
45-64	1566	1476	1344	892	712	602
65-74	4913	4641	4407	3185	2624	2205
75+	13304	13317	12094	10523	10071	9056

APPENDIX TABLE A.III.4 (*continued*)

Age-specific death rates, by sex, in nine countries, about 1950, 1960 and 1970

(*Rates per 100,000 population in sex-age group*)

Region, country and age	*Males*			*Females*		
	1950	*1960*	*1970*	*1950*	*1960*	*1970*
Germany, Federal Republic of						
Under 1	6458	3838	2727	5133	3008	2039
1-4	261	145	106	223	118	84
5-14	85	57	57	61	35	36
15-24	171	156	161	108	57	59
25-44	299	232	240	213	149	132
45-64	1337	1417	1392	925	770	724
65-74	4564	5093	5473	3857	3324	3044
75+	12213	14011	13977	11626	11975	10980
Southern Europe						
Italy						
Under 1	7341	4881	3580	6369	4075	2710
1-4	451	211	120	441	200	90
5-14	91	64	50	73	45	30
15-24	151	121	110	118	57	45
25-44	288	214	197	215	141	110
45-64	1337	1302	1301	876	713	664
65-74	4482	4392	4793	3629	2997	2768
75+	13429	12923	11725	12147	10959	9602
Spain						
Under 1	7073	3962	2547	6164	3182	2013
1-4	746	213	115	730	186	96
5-14	165	65	48	148	49	34
15-24	287	104	106	226	62	49
25-44	465	229	228	326	160	124
45-64	1554	1204	1196	938	714	649
65-74	10349	4406	4446	9333	2977	2793
75+	14684	12692	12738	13228	10859	10926
USSR						
Under 1	..	4524	2733	..	3746	2196
1-4	..	408	267	..	392	214
5-14	..	115	75	..	85	50
15-24	..	195	190	..	110	70
25-44	..	417	510	..	207	175
45-64	..	1571	1734	..	746	741
65-74	..	4402	5017	..	2812	2777
75+	..	11236	11198	..	9615	8475

Appendix table A.III.5

Death rates for five main sets of cause, for ages over one year and by sex, eight selected countries, about 1960 and 1970

	Males		*Females*	
Region, country and age	*1960*	*1970*	*1960*	*1970*
	Malignant neoplasms			
Eastern Europe				
Hungary				
1-4	13.7	9.0	8.2	8.1
5-14	8.3	7.9	4.3	5.7
15-24	13.0	9.6	7.8	7.5
25-44	29.1	36.2	48.2	43.9
45-74	577.0	664.6	423.9	423.3
75+	1569.0	1989.0	1146.1	1294.9
Poland				
1-4	7.3	13.8	7.5	7.3
5-14	6.5	8.2	5.6	6.3
15-24	9.7	9.1	6.5	7.1
25-44	28.3	37.7	40.8	41.0
45-74	436.2	598.7	313.7	372.3
75+	831.5	1267.1	600.2	794.9
Northern Europe				
England and Wales				
1-4	11.0	9.7	10.5	7.3
5-14	8.2	7.1	6.6	6.0
15-24	10.5	10.8	6.7	6.4
25-44	37.4	34.4	45.8	44.1
45-74	662.6	708.8	389.9	410.9
75+	1779.0	2096.2	1087.8	1106.2
Sweden				
1-4	11.6	9.8	14.7	6.9
5-14	7.9	6.2	7.1	6.2
15-24	11.6	10.0	7.3	5.1
25-44	28.5	26.6	42.9	37.7
45-74	465.7	454.1	385.8	367.6
75+	1681.9	1844.6	1198.9	1220.1
Western Europe				
France				
1-4	13.3	9.0	11.0	7.9
5-14	9.2	8.4	7.0	6.1
15-24	11.0	10.8	8.6	6.5
25-44	30.1	40.5	38.9	33.2
45-74	609.1	664.0	357.4	329.8
75+	1803.1	1992.7	1168.8	1146.3
Germany, Federal Republic of				
1-4	12.8	11.2	10.8	10.0
5-14	8.4	7.8	6.3	6.2
15-24	11.7	10.0	8.7	8.2
25-44	32.7	33.7	49.4	44.0
45-74	626.7	671.4	439.8	429.7
75+	1913.5	2221.7	1487.1	1456.7
Southern Europe				
Italy				
1-4	14.5	12.4	12.0	10.2
5-14	9.2	10.2	6.3	7.4
15-24	11.1	10.5	8.3	8.6
25-44	34.9	40.1	42.1	39.6
45-74	524.7	636.2	352.0	362.4
75+	1326.3	1671.3	972.5	1000.0

APPENDIX TABLE A.III.5 (*continued*)

Death rates for five main sets of cause, for ages over one year and by sex, eight selected countries, about 1960 and 1970

Region, country and age	*Males*		*Females*	
	1960	*1970*	*1960*	*1970*
Spain				
1-4	10.7	10.5	8.9	10.8
5-14	5.7	7.6	5.1	6.0
15-24	8.1	8.5	6.0	6.9
25-44	31.1	30.1	34.3	29.8
45-74	474.7	462.9	300.1	278.3
75+	1383.4	1440.3	895.7	903.9
Eastern Europe	*Vascular lesions of the central nervous system*			
Hungary				
1-4	–	0.7	0.3	0.7
5-14	–	0.7	0.2	0.6
15-24	0.8	1.4	1.2	1.5
25-44	6.0	10.9	5.5	6.3
45-74	361.5	337.1	340.5	270.4
75+	2390.3	2539.4	2222.8	2389.0
Poland				
1-4	1.1	1.4	0.9	0.8
5-14	1.3	0.6	0.8	0.6
15-24	3.7	1.8	2.1	1.0
25-44	7.9	6.9	5.2	3.6
45-74	132.7	112.0	129.7	97.4
75+	501.7	544.5	529.4	578.1
Northern Europe				
England and Wales				
1-4	0.7	0.2	0.5	0.1
5-14	0.6	0.3	0.4	0.4
15-24	1.3	1.2	1.2	1.1
25-44	7.6	7.1	8.0	7.7
45-74	303.1	258.2	253.0	202.6
75+	2148.6	2090.6	2125.0	2083.0
Sweden				
1-4	–	0.4	1.0	–
5-14	0.5	0.2	0.5	0.6
15-24	1.3	1.1	0.6	1.5
25-44	5.8	5.7	5.0	4.6
45-74	214.6	147.8	209.8	120.5
75+	1837.7	1303.6	1927.8	1330.3
Western Europe				
France				
1-4	1.1	1.2	0.6	0.9
5-14	0.6	0.9	0.7	0.7
15-24	1.1	1.6	0.8	1.1
25-44	7.3	8.1	4.7	1.6
45-74	267.6	250.2	187.7	153.1
75+	1964.4	2161.2	1554.2	1728.6
Germany, Federal Republic of				
1-4	0.3	0.6	0.2	0.4
5-14	0.3	0.6	0.3	0.3
15-24	0.8	0.9	0.8	0.8
25-44	4.8	5.7	3.0	4.4
45-74	347.3	296.3	290.2	202.9
75+	2860.9	2649.9	2711.7	2445.7

APPENDIX TABLE A.III.5 (*continued*)

Death rates for five main sets of cause, for ages over one year and by sex, eight selected countries, about 1960 and 1970

Region, country and age	*Males*		*Females*	
	1960	*1970*	*1960*	*1970*
Southern Europe				
Italy				
1-4	0.4	0.3	0.4	0.2
5-14	0.4	0.5	0.3	0.3
15-24	1.1	1.6	0.7	1.2
25-44	5.2	7.9	3.8	4.5
45-74	348.8	284.0	263.3	198.7
75+	2431.9	2214.7	1976.9	1812.9
Spain				
1-4	2.3	2.7	1.2	1.5
5-14	2.0	1.5	1.3	1.3
15-24	3.4	2.5	1.6	1.7
25-44	10.7	9.2	7.3	5.9
45-74	326.8	261.1	273.5	218.2
75+	2151.6	2013.0	2085.7	2005.3
Eastern Europe				
Hungary				
1-4	0.9	–	1.6	–
5-14	1.0	–	1.4	–
15-24	7.1	0.5	3.7	–
25-44	22.4	31.9	15.2	6.6
45-74	535.8	594.5	363.6	300.7
75+	3440.7	3273.0	3138.9	2777.5
Poland				
1-4	1.3	0.3	0.1	0.3
5-14	0.5	0.0	0.5	–
15-24	2.2	1.0	0.8	0.3
25-44	12.7	22.3	5.3	3.0
45-74	247.6	280.6	127.0	98.2
75+	881.6	778.5	687.3	537.5
Northern Europe				
England and Wales				
1-4	0.1	–	0.1	–
5-14	0.3	–	0.1	–
15-24	0.7	0.5	0.4	0.1
25-44	29.2	35.0	4.3	5.4
45-74	811.3	848.9	339.2	303.5
75+	4286.2	3396.8	3355.0	2244.4
Sweden				
1-4	–	–	–	–
5-14	0.2	–	–	–
15-24	0.2	0.5	–	–
25-44	10.7	13.0	2.6	2.3
45-74	648.2	710.2	319.4	285.0
75+	4088.4	4466.3	3460.1	3389.1
Western Europe				
France				
1-4	0.4	0.1	0.3	0.2
5-14	0.1	0.1	0.1	0.0
15-24	0.5	0.2	0.4	0.2
25-44	9.4	11.7	1.6	1.4
45-74	235.7	250.3	95.0	93.9
75+	959.5	915.1	682.1	591.3

Appendix table A.III.5 (*continued*)

Death rates for five main sets of cause, for ages over one year and by sex, eight selected countries, about 1960 and 1970

	Males		*Females*	
Region, country and age	*1960*	*1970*	*1960*	*1970*
Germany, Federal Republic of				
1-4	0.9	–	0.6	0.1
5-14	0.5	–	0.4	0.0
15-24	2.8	0.5	1.9	0.2
25-44	24.5	21.2	10.8	3.4
45-74	583.0	553.3	287.6	186.0
75+	2464.6	2143.9	2105.4	1440.6
Southern Europe				
Italy				
1-4	0.9	–	0.8	–
5-14	0.6	–	0.6	0.0
15-24	1.9	1.2	1.4	3.3
25-44	18.9	17.6	7.1	3.1
45-74	487.3	382.2	298.7	163.7
75+	3307.5	1968.8	3084.2	1648.4
Spain				
1-4	–	–	–	–
5-14	0.5	–	0.4	–
15-24	2.7	0.8	1.7	0.4
25-44	11.6	9.5	6.3	2.3
45-74	228.9	180.3	122.9	66.6
75+	1170.8	748.9	1096.4	573.8
Eastern Europe	*Other heart and circulatory diseases*			
Hungary				
1-4	1.8	5.2	1.9	2.9
5-14	3.0	0.8	1.5	1.3
15-24	5.4	5.6	5.1	23.7
25-44	11.8	26.5	12.8	20.8
45-74	229.7	418.6	207.6	311.8
75+	1985.8	3454.0	1947.9	3360.3
Poland				
1-4	10.2	2.4	9.8	2.9
5-14	4.9	1.8	5.0	1.7
15-24	14.1	6.9	11.8	5.2
25-44	32.5	27.1	26.6	19.2
45-74	543.4	690.2	367.7	458.6
75+	2418.3	4367.9	2035.6	3992.3
Northern Europe				
England and Wales				
1-4	0.5	1.1	0.9	1.0
5-14	0.9	0.6	0.8	0.7
15-24	3.4	3.1	2.3	1.8
25-44	14.1	11.3	15.4	10.1
45-74	228.8	234.3	178.5	162.6
75+	1575.3	2025.1	1440.7	1898.0
Sweden				
1-4	0.5	0.4	–	0.9
5-14	1.0	0.7	0.7	0.2
15-24	2.1	2.1	2.2	0.3
25-44	8.4	7.0	6.8	3.2
45-74	162.7	130.6	153.6	91.7
75+	1404.3	1038.6	1569.2	1073.9

Appendix table A.III.5 (*continued*)

Death rates for five main sets of cause, for ages over one year and by sex, eight selected countries, about 1960 and 1970

Region, country and age	*Males*		*Females*	
	1960	*1970*	*1960*	*1970*
Western Europe				
France				
1-4	2.3	1.9	1.5	1.6
5-14	1.2	0.9	1.3	0.8
15-24	3.9	2.7	3.6	2.0
25-44	14.6	14.2	11.0	8.3
45-74	342.6	287.5	203.8	152.8
75+	2465.6	2331.2	1983.0	1934.5
Germany, Federal Republic of				
1-4	1.0	0.6	1.0	0.8
5-14	0.8	0.4	0.6	0.4
15-24	1.8	3.0	1.5	1.9
25-44	6.5	14.2	6.1	11.5
45-74	157.6	316.1	132.6	226.4
75+	1258.3	2529.8	1261.4	2444.6
Southern Europe				
Italy				
1-4	2.5	0.6	2.6	1.2
5-14	3.9	1.6	4.2	1.5
15-24	7.2	4.7	7.1	3.5
25-44	15.3	13.7	18.4	13.8
45-74	217.7	312.1	190.4	240.7
75+	1620.7	2853.0	1558.2	2678.8
Spain				
1-4	5.8	3.3	5.1	3.6
5-14	4.7	3.7	4.4	3.2
15-24	9.2	9.9	8.3	8.1
25-44	19.4	28.9	22.7	25.7
45-74	280.9	493.8	221.2	341.1
75+	1879.3	3442.3	2097.8	3715.8
	Accidents and violence			
Eastern Europe				
Hungary				
1-4	29.5	35.2	18.3	24.2
5-14	20.5	20.8	6.9	12.2
15-24	81.5	89.0	24.0	18.6
25-44	87.0	122.0	18.9	23.2
45-74	128.9	196.0	51.6	74.1
75+	339.8	574.7	321.0	545.3
Poland				
1-4	45.7	42.9	29.9	27.4
5-14	23.5	24.4	8.0	10.7
15-24	98.0	84.8	14.8	16.2
25-44	85.3	122.5	12.4	18.3
45-74	84.2	127.3	26.6	43.4
75+	116.7	258.3	79.8	200.8
Northern Europe				
England and Wales				
1-4	23.3	23.7	14.1	15.2
5-14	18.3	16.9	7.9	6.4
15-24	66.5	60.4	12.4	16.2
25-44	45.6	42.3	14.6	15.5
45-74	82.7	66.3	49.5	44.1
75+	306.1	256.2	308.1	274.5

APPENDIX TABLE A.III.5 *(concluded)*

Death rates for five main sets of cause, for ages over one year and by sex, eight selected countries, about 1960 and 1970

Region, country and age	*Males*		*Females*	
	1960	*1970*	*1960*	*1970*
Sweden				
1-4	37.0	24.2	14.2	15.2
5-14	21.6	22.9	9.1	10.5
15-24	62.5	73.1	16.5	28.3
25-44	73.4	86.1	16.7	29.8
45-74	126.5	128.8	47.1	52.1
75+	355.8	271.7	415.5	257.2
Western Europe				
France				
1-4	30.7	32.5	20.4	21.6
5-14	16.8	23.2	7.1	11.8
15-24	65.0	101.7	19.9	32.2
25-44	94.8	107.0	20.8	28.8
45-74	167.0	177.2	57.7	62.8
75+	432.5	484.4	400.9	510.1
Germany, Federal Republic of				
1-4	46.3	38.3	31.7	27.3
5-14	27.4	35.5	11.1	16.6
15-24	112.4	125.9	19.9	32.1
25-44	93.1	101.4	20.3	28.0
45-74	145.2	149.4	56.8	67.4
75+	437.0	467.9	455.1	499.2
Southern Europe				
Italy				
1-4	34.0	25.3	23.2	16.4
5-14	21.4	23.1	7.4	8.8
15-24	69.8	72.5	11.6	15.1
25-44	64.1	64.9	10.3	13.1
45-74	113.2	122.5	33.4	38.8
75+	279.2	324.0	234.6	263.1
Spain				
1-4	14.8	25.6	9.7	16.5
5-14	17.1	16.9	7.8	6.9
15-24	46.6	58.4	9.1	12.3
25-44	65.0	73.9	13.8	12.9
45-74	96.2	91.7	27.5	28.3
75+	159.3	206.0	73.2	112.6

Appendix table A.V.1

Crude birth rates, 1901-1970

(5-year average number of births per 1,000 population)

Region and country	*1901-1905*	*1906-1910*	*1911-1915*	*1916-1920*	*1921-1925*	*1926-1930*	*1931-1935*	*1936-1940*	*1941-1945*	*1946-1950*	*1951-1955*	*1956-1960*	*1961-1965*	*1966-1970*
Eastern Europe														
Bulgaria	40.6	42.1	38.6	26.5	39.0	33.2	29.3	23.3	22.5	24.8	20.7	18.2	16.4	16.0
Czechoslovakia	34.7	32.4	27.1	17.7	26.3	22.4	18.8	17.9	20.8	23.2	21.4	17.6	16.4	15.4
German Democratic Republic	..	..	..	..	..	..	..	18.3	..	13.7	16.9	16.5	17.3	14.5
Hungary	36.9	35.8	32.1	21.8	29.4	26.0	22.4	19.9	19.4	20.4	21.2	16.5	13.2	14.6
Poland	44.0	38.5	37.8	32.3	34.7	32.3	27.8	25.3	..	28.4	29.8	25.9	19.1	16.5
Romania	39.6	40.3	42.1	34.9	37.9	35.2	32.1	29.2	26.0	25.2	24.8	21.6	15.8	22.5
Northern Europe														
Denmark	29.0	28.2	25.7	24.0	22.3	19.4	17.8	18.0	21.3	20.7	17.6	16.7	17.3	15.9
Finland	32.4	32.5	29.2	24.9	24.7	22.5	19.5	19.8	21.6	26.8	22.1	19.4	17.8	15.4
Iceland	28.2	27.3	26.1	26.7	26.5	25.6	23.5	20.5	24.7	27.6	28.0	28.2	25.4	21.5
Ireland	22.3	22.8	22.5	20.5	20.3	20.1	19.4	19.3	21.6	22.2	21.4	21.1	21.9	21.4
Norway	28.5	26.4	25.0	24.5	22.2	18.0	15.2	15.4	18.5	20.6	18.6	17.9	17.5	17.4
Sweden	26.1	25.4	23.1	21.2	19.1	15.9	14.1	14.8	18.7	18.2	15.2	14.3	15.0	15.0
United Kingdom	28.2	26.4	23.8	20.5	20.3	17.2	15.5	15.2	16.2	18.3	15.7	16.8	18.4	17.1
Western Europe														
Austria	30.4	27.8	23.3	16.8	22.2	17.7	14.4	16.5	17.7	16.8	15.0	17.3	18.5	16.7
Belgium	27.7	24.7	20.9	14.8	20.5	18.5	16.8	15.2	14.3	17.6	16.7	17.0	17.0	15.1
France	21.2	19.9	17.4	13.3	19.4	18.2	16.5	14.5	15.1	20.9	18.9	18.2	17.9	17.1
Germany, Federal Republic of	..	..	..	..	..	..	..	19.8	..	16.7	16.0	17.2	18.3	15.9
Luxembourg	30.7	29.3	25.5	18.4	20.4	21.0	17.0	14.7	14.9	14.2	15.0	15.9	15.9	14.1
Netherlands	31.6	29.6	27.8	26.3	25.9	23.2	21.2	20.4	22.2	25.9	21.8	21.2	20.7	18.9
Switzerland	27.8	26.0	22.7	19.1	19.5	17.5	16.4	15.2	18.8	19.0	17.1	17.6	18.7	17.1
Southern Europe														
Albania	..	..	..	..	..	..	..	32.4	30.5	34.6	38.9	41.8	40.1	35.0
Greece	..	..	..	..	21.5	29.9	29.4	25.9	19.4	24.1	19.3	19.3	17.8	17.7
Italy	32.6	32.7	31.4	23.0	29.8	26.8	23.9	23.2	19.8	21.4	18.0	18.1	19.1	18.0
Malta	—— 39.7 ——		—— 31.4 ——		35.4	32.3	33.2	33.1	32.2	35.9	28.7	26.6	20.8	16.4
Portugal	31.9	30.9	34.0	30.9	32.8	31.2	29.0	26.4	24.8	25.3	24.1	24.1	23.8	20.3
Spain	35.3	33.3	30.9	29.0	30.1	28.7	27.2	21.8	21.7	21.7	20.4	21.6	21.5	20.4
Yugoslavia	..	..	..	..	35.0	34.2	31.9	27.4	..	28.7	28.1	24.2	21.6	19.2
USSR	48.6	45.8	45.5	43.7	..	44.4	..	36.0	..	26.7	26.2	25.2	21.0	17.4

APPENDIX TABLE A.V.2

Age-specific Fertility Rates, 1946-1973 [a], [b]

(Births per 1,000 women of given age)

Region, country and age	*1946*	*1947*	*1948*	*1949*	*1950*	*1951*	*1952*	*1953*	*1954*	*1955*	*1956*
Eastern Europe											
Bulgaria[c]											
Less than 20	50.7	48.3	49.9	53.2	54.9	54.0	54.1	57.0	60.4	59.7	61.1
20-24	199.8	188.1	195.9	195.2	200.1	171.0	175.5	174.6	168.4	180.3	181.7
25-29	178.8	166.2	163.8	163.0	162.2	132.4	135.2	132.7	129.2	130.8	125.4
30-34	108.2	98.3	95.5	92.8	99.5	78.3	74.6	70.0	67.4	65.0	61.5
35-39	53.2	49.3	50.4	48.6	49.2	38.1	35.3	33.6	32.6	33.5	30.4
40-44	16.6	15.1	15.4	14.9	16.8	12.4	11.5	11.8	10.8	10.6	9.8
45 or more	4.1	3.6	3.5	3.5	4.1	2.8	2.4	2.4	1.9	2.0	1.8
Czechoslovakia											
Less than 20	..	40.1	44.8	45.5	50.7	52.7	51.7	48.3	45.1	44.6	47.0
20-24	..	178.8	182.5	183.6	194.1	196.4	195.2	193.5	197.5	201.0	206.0
25-29	..	181.6	170.2	165.4	169.1	168.4	165.8	159.7	158.4	159.0	156.8
30-34	..	120.7	109.5	100.0	108.8	106.5	104.7	101.1	97.4	94.5	91.0
35-39	..	72.9	67.4	60.7	62.5	58.4	55.4	51.3	49.6	51.7	50.6
40-44	..	23.6	23.2	21.2	21.5	20.4	19.1	18.8	17.5	16.9	14.4
45 or more	..	1.8	1.7	1.8	1.8	1.7	1.6	1.5	1.3	1.4	1.1
German Democratic Republic[d]											
Less than 20	..	23.7	23.4	27.6	35.7	41.2	42.4	42.5	42.1	43.8	42.6
20-24	..	109.5	109.0	126.0	149.6	159.7	162.1	163.7	163.4	163.5	161.1
25-29	..	99.0	97.4	119.1	139.0	139.8	136.1	132.7	132.0	131.5	127.2
30-34	..	61.3	57.8	68.8	83.5	85.7	84.1	82.1	80.1	79.4	73.1
35-39	..	33.3	30.1	33.9	40.3	43.0	42.5	41.0	40.8	39.7	37.1
40-44	..	10.4	9.3	9.6	11.0	12.7	12.4	11.9	11.9	11.4	10.6
45 or more	..	..	..	..	..	..	..	..	..	..	..
Hungary[e]											
Less than 20	36.3	45.0	47.8	47.9	52.5	52.2	49.2	50.7	54.0	55.9	57.0
20-24	132.0	154.7	162.1	161.4	168.4	166.5	163.4	177.4	192.9	188.6	183.7
25-29	123.6	133.0	138.3	138.6	141.5	137.8	135.3	152.1	165.2	151.5	137.6
30-34	91.2	93.9	91.2	86.4	86.8	82.3	82.5	96.9	105.9	96.5	84.1
35-39	56.1	58.4	55.9	52.4	50.5	47.3	45.6	54.7	56.9	50.5	43.2
40-44	19.9	20.5	19.8	18.9	18.5	17.3	16.1	18.1	18.2	16.7	13.6
45 or more	1.8	1.7	1.7	1.7	1.6	1.5	1.3	1.4	1.3	1.3	1.0
Poland											
Less than 20	..	..	..	..	39.0	39.0	38.0	37.0	39.0	42.0	43.0
20-24	..	..	..	..	194.0	198.0	197.0	200.0	202.0	208.0	207.0
25-29	..	..	..	..	209.0	211.0	206.0	203.0	201.0	203.0	198.0
30-34	..	..	..	..	157.0	158.0	156.0	152.0	146.0	144.0	136.0
35-39	..	..	..	..	100.0	100.0	95.0	90.0	90.0	89.0	84.0
40-44	..	..	..	..	38.0	39.0	38.0	36.0	34.0	32.0	30.0
45 or more	..	..	..	..	4.0	4.0	4.0	3.0	4.0	3.0	3.0
Romania[f]											
Less than 20	..	..	36.1	..	..	..	..	..	..	..	52.5
20-24	..	..	167.6	..	..	..	..	..	..	..	180.4
25-29	..	..	174.3	..	..	..	..	..	..	..	155.9
30-34	..	..	94.6	..	..	..	..	..	..	..	103.5
35-39	..	..	73.5	..	..	..	..	..	..	..	58.8
40-44	..	..	27.5	..	..	..	..	..	..	..	23.8
45 or more	..	..	3.7	..	..	..	..	..	..	..	2.7
Northern Europe											
Denmark											
Less than 20	35.3	36.7	37.2	36.7	40.2	38.4	40.9	40.5	40.6	41.5	42.2
20-24	155.9	155.3	150.0	151.5	151.8	153.8	155.4	162.7	161.8	167.1	169.7
25-29	174.0	165.9	154.6	149.3	149.7	147.3	150.4	155.1	151.0	152.7	153.9

APPENDIX TABLE A.V.2 (*continued*)

Age-specific Fertility Rates, 1946-1973 [a, b]

(Births per 1,000 women of given age)

1957	*1958*	*1959*	*1960*	*1961*	*1962*	*1963*	*1964*	*1965*	*1966*	*1967*	*1968*	*1969*	*1970*	*1971*	*1972*	*1973*
62.9	63.4	70.9	74.5	71.8	68.5	68.0	70.4	67.4	65.0	68.0	75.3	74.2	71.5	69.7	69.3	..
179.8	177.5	180.6	187.1	185.2	182.4	181.7	183.9	175.1	175.2	176.8	197.3	194.3	189.2	186.4	181.1	..
119.1	118.7	115.7	120.0	119.3	114.8	113.5	107.7	105.7	102.1	102.3	118.3	120.3	111.6	106.1	101.8	..
54.5	54.9	50.2	51.3	52.1	51.6	49.9	48.2	45.7	41.7	40.3	45.1	47.1	45.0	42.3	39.3	..
26.4	22.1	20.7	19.7	19.3	19.2	18.1	16.9	16.8	15.3	14.6	15.5	15.8	14.8	13.5	12.4	..
7.5	7.3	6.2	7.2	6.4	6.3	5.4	5.0	4.4	3.8	3.8	3.9	3.4	3.1	3.1	3.0	..
1.5	1.1	1.2	0.9	0.8	0.8	0.6	0.7	0.7	0.7	0.6	0.5	0.6	0.4	0.4	0.3	..
48.2	46.2	45.9	46.0	45.2	44.9	47.3	46.4	45.1	45.0	44.8	42.9	45.3	45.5	47.0	49.0	..
205.3	200.3	196.6	198.7	198.7	198.4	206.8	204.8	193.4	184.8	177.2	173.5	176.7	180.5	184.0	194.0	..
149.8	141.8	130.5	131.7	130.7	130.8	142.6	144.0	134.8	124.8	114.7	109.7	111.6	113.9	119.0	124.0	..
86.5	76.5	65.1	63.8	64.4	60.8	68.2	70.2	68.8	59.0	53.5	50.3	50.7	51.5	54.0	54.0	..
47.4	39.4	30.9	29.1	28.1	25.8	28.1	28.8	27.2	24.4	21.6	20.0	19.7	18.6	19.0	18.0	..
12.1	9.3	7.8	8.8	8.5	7.8	7.4	7.5	6.9	5.8	5.2	4.8	4.6	4.5	4.3	4.2	..
1.1	0.8	0.6	0.6	0.4	0.3	0.4	0.4	0.5	0.5	0.4	0.3	0.3	0.3	0.2	0.2	..
42.3	43.1	47.9	50.7	54.4	57.3	60.8	63.9	66.1	64.2	61.9	59.8	60.0	60.9	62.0	55.5	..
157.7	157.3	168.7	167.1	175.2	178.8	181.0	182.0	182.6	182.6	182.6	185.1	183.0	181.9	177.2	153.6	..
126.3	126.1	134.5	132.0	133.2	132.2	134.6	135.0	131.9	129.0	122.5	117.9	113.7	108.9	104.0	85.3	..
71.6	70.8	73.8	72.3	73.1	72.3	74.2	76.8	74.1	71.1	66.1	63.4	59.5	57.2	54.1	41.0	..
34.2	34.3	35.0	34.1	34.2	33.2	33.9	34.3	33.0	31.1	28.6	28.1	26.4	25.1	24.3	18.1	..
9.6	9.0	9.1	9.4	9.2	9.0	9.2	9.4	8.7	6.7	5.8	5.1	4.4	4.3	4.4	3.8	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
58.9	57.2	55.6	54.3	52.3	46.8	44.7	45.2	46.5	48.9	52.8	54.3	55.3	54.1	50.3	53.5	57.5
172.4	167.3	161.3	157.6	152.6	141.7	142.4	143.2	145.8	151.2	159.3	162.6	160.5	157.0	157.7	157.4	157.0
116.0	110.7	107.7	105.9	101.5	95.6	100.9	100.5	100.6	104.4	112.0	116.2	111.8	108.4	103.8	105.2	105.1
67.0	61.3	56.7	53.5	50.4	47.2	46.9	48.4	48.0	49.0	53.5	54.9	54.2	51.4	49.8	47.8	48.1
34.3	30.2	27.4	25.2	23.1	20.5	21.3	19.3	18.4	18.9	19.8	20.0	19.8	18.7	17.9	17.4	17.9
10.5	9.0	8.2	7.3	6.8	6.3	5.7	5.4	4.9	4.7	4.7	4.6	4.6	4.4	4.1	2.2	2.0
0.7	0.9	0.6	0.5	0.5	0.4	0.3	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.2		
46.0	47.0	48.0	45.0	42.0	37.0	34.0	34.0	32.0	32.0	31.0	30.0	30.0	30.0	29.0	27.0	28.0
214.0	211.0	207.0	199.0	195.0	193.0	194.0	185.0	184.0	177.0	170.0	164.0	164.0	165.0	171.0	168.0	169.0
197.0	188.0	178.0	165.0	157.0	152.0	153.0	148.0	144.0	140.0	134.0	128.0	125.0	126.0	130.0	134.0	136.0
131.0	123.0	114.0	103.0	96.0	91.0	91.0	87.0	84.0	81.0	77.0	74.0	71.0	71.0	72.0	71.0	71.0
80.0	75.0	69.0	60.0	54.0	49.0	48.0	46.0	43.0	42.0	40.0	39.0	37.0	36.0	36.0	35.0	35.0
26.0	24.0	24.0	22.0	20.0	19.0	18.0	16.0	15.0	13.0	12.0	12.0	12.0	11.0	11.0	11.0	11.0
3.0	3.0	3.0	2.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
54.3	55.9	59.4	59.1	62.6	58.4	61.5	56.8	52.4	51.7	79.8	82.4	72.6	65.7	62.1	61.6	60.6
180.1	176.7	168.4	164.1	155.4	147.4	144.0	144.0	140.7	143.0	251.8	251.4	215.7	201.4	190.9	185.9	182.4
145.4	136.8	125.8	121.2	110.1	105.0	102.9	102.6	99.8	98.2	198.1	193.9	171.7	151.6	138.1	131.6	124.2
92.8	84.2	73.9	67.6	60.1	54.9	53.1	52.2	53.5	53.4	124.1	126.5	108.0	94.9	82.7	76.9	71.6
54.6	48.2	42.6	39.0	32.4	29.5	28.2	26.2	25.1	25.1	59.7	63.9	54.7	48.8	44.3	40.7	37.6
17.2	14.0	14.4	14.5	13.2	11.4	10.7	9.5	8.9	8.3	16.6	17.3	15.0	13.8	13.1	12.0	10.3
2.2	1.8	1.6	1.4	0.9	0.8	0.7	0.8	0.8	0.9	1.2	1.2	1.0	0.9	0.8	0.8	0.6
42.3	40.6	41.1	41.8	45.6	44.9	47.3	47.3	47.1	49.6	47.6	44.1	38.8	32.4	29.0	..	
171.0	172.5	168.1	170.7	170.5	172.2	176.9	176.2	176.3	179.2	161.9	142.6	133.3	130.4	138.9	..	
152.5	153.1	153.2	157.6	156.2	156.2	163.5	161.4	163.0	161.3	145.0	133.0	128.2	130.8	142.8	..	

APPENDIX TABLE A.V.2 (*continued*)

Age-specific Fertility Rates, 1946-1973[a, b]

(*Births per 1,000 women of given age*)

Region, country and age	*1946*	*1947*	*1948*	*1949*	*1950*	*1951*	*1952*	*1953*	*1954*	*1955*	*1956*
30-34	136.3	122.6	111.3	100.4	98.7	93.0	94.9	95.0	93.0	92.6	91.7
35-39	77.6	73.4	64.6	57.2	55.6	50.1	48.9	49.3	46.6	45.7	45.7
40-44	23.4	24.1	22.2	19.4	17.9	16.8	15.4	15.6	14.4	14.4	13.8
45 or more	1.7	1.7	1.7	1.4	1.2	1.1	1.1	0.8	1.1	1.1	0.9
Finland											
Less than 20	21.1	25.4	27.2	27.6	27.1	24.8	26.6	27.2	28.0	28.6	28.6
20-24	156.3	167.1	168.3	162.9	154.6	150.1	160.0	156.2	160.5	161.5	164.8
25-29	191.6	198.0	195.4	187.3	175.5	168.0	168.4	164.4	162.9	165.4	165.5
30-34	154.5	151.0	152.4	142.4	136.0	131.6	131.2	124.3	121.5	117.5	115.7
35-39	106.6	103.9	100.7	97.9	93.1	85.6	83.6	80.8	77.0	77.2	74.8
40-44	45.9	43.9	44.1	42.4	40.4	37.7	36.8	34.9	32.8	33.2	30.1
45 or more	5.3	5.2	4.9	4.9	4.6	4.0	5.6	3.6	3.3	3.2	3.1
Ireland[g]											
Less than 20	..	..	..	..	..	..	..	..	..	10.0	10.0
20-24	..	..	..	..	..	..	..	..	..	90.0	93.0
25-29	..	..	..	..	..	..	..	..	..	179.0	184.0
30-34	..	..	..	..	..	..	..	..	..	201.0	197.0
35-39	..	..	..	..	..	..	..	..	..	138.0	140.0
40-44	..	..	..	..	..	..	..	..	..	56.0	54.0
45 or more	..	..	..	..	..	..	..	..	..	4.0	4.0
Norway[h]											
Less than 20	14.3	14.8	15.6	16.0	17.4	18.7	20.2	21.5	23.0	25.5	27.0
20-24	92.3	99.1	101.7	102.2	109.4	114.3	125.2	132.1	139.9	147.6	154.2
25-29	151.5	146.6	145.0	142.8	143.5	142.5	151.6	156.6	159.8	165.4	168.9
30-34	148.2	134.9	128.5	123.9	121.6	114.9	118.2	117.9	117.2	119.1	121.5
35-39	103.3	93.9	87.5	81.2	77.8	72.8	74.2	72.8	69.7	70.9	72.1
40-44	40.1	38.1	36.8	33.2	31.5	30.2	29.1	29.1	27.4	26.4	25.8
45 or more	3.9	3.8	3.9	3.7	3.4	3.2	3.0	2.7	2.6	2.9	2.6
Sweden											
Less than 20	32.8	34.6	36.1	36.6	37.8	37.7	37.9	39.4	38.0	39.0	39.6
20-24	126.8	128.1	128.4	125.1	125.7	123.0	127.3	129.5	126.8	133.1	134.5
25-29	145.7	141.0	138.6	136.3	128.5	125.4	128.5	131.6	125.8	131.9	135.6
30-34	112.8	106.6	103.9	98.4	93.2	88.2	87.3	86.8	86.0	85.8	87.7
35-39	68.6	65.1	62.5	59.2	54.9	50.3	49.0	48.7	45.9	45.1	44.6
40-44	24.3	23.2	22.9	20.6	18.1	17.2	16.7	16.3	14.9	14.3	14.0
45 or more	2.0	2.0	1.8	1.8	1.5	1.5	1.3	1.2	1.2	1.2	1.0
United Kingdom:											
England and Wales											
Less than 20	16.8	19.3	21.4	22.7	22.2	21.2	21.3	22.0	22.7	23.5	27.3
20-24	119.3	146.0	136.9	132.4	126.3	125.8	128.8	134.6	136.2	137.1	146.7
25-29	153.5	169.7	145.2	138.3	136.2	133.3	134.8	139.5	139.1	141.7	150.6
30-34	118.0	117.6	99.2	92.3	89.4	88.6	88.7	89.0	84.9	84.3	88.2
35-39	66.2	65.6	56.2	50.7	48.3	45.8	44.4	44.2	44.3	44.2	45.5
40-44	19.1	19.4	17.4	15.2	14.2	13.4	13.1	13.0	12.9	12.4	12.4
45 or more	1.4	1.4	1.3	1.2	1.1	1.0	1.0	0.9	0.8	0.8	0.8
Scotland											
Less than 20	17.4	20.0	20.6	22.0	21.0	19.7	19.6	20.3	21.4	22.5	25.9
20-24	118.9	143.4	133.8	131.4	128.6	128.6	130.5	134.9	144.0	146.5	154.4
25-29	182.7	182.2	157.6	151.7	147.8	147.7	148.9	152.1	153.3	160.2	165.0
30-34	133.8	133.9	115.9	109.3	108.2	105.7	105.5	104.9	104.0	103.6	106.9
35-39	76.6	78.2	68.3	64.0	60.9	59.1	58.6	57.3	58.2	56.2	57.8
40-44	21.3	23.1	21.1	18.8	18.2	17.0	16.5	16.0	16.2	15.5	15.1
45 or more	1.5	1.6	1.4	1.3	1.3	1.2	0.9	1.2	1.0	0.9	0.9

Appendix table A.V.2 (*continued*)

Age-specific Fertility Rates, 1946-1973 [a, b]

(Births per 1,000 women of given age)

1957	*1958*	*1959*	*1960*	*1961*	*1962*	*1963*	*1964*	*1965*	*1966*	*1967*	*1968*	*1969*	*1970*	*1971*	*1972*	*1973*
89.0	87.8	85.3	87.7	87.2	86.7	89.8	87.1	87.2	87.6	76.1	68.9	67.4	66.0	69.1	..	
42.3	40.7	39.4	38.7	38.5	37.8	39.9	38.2	38.5	36.5	31.8	28.2	26.5	24.7	24.2	..	
12.9	11.4	11.1	11.5	10.7	10.4	10.3	9.6	9.2	8.2	7.0	6.3	5.4	5.4	4.4	..	
1.2	0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.7	0.6	0.5	0.3	0.4	0.3	0.3	..	
30.1	29.6	29.8	28.4	27.8	27.8	30.3	31.6	33.7	35.1	35.5	35.0	33.5	32.2	..	..	
164.3	154.2	161.0	162.9	159.4	161.4	159.2	152.7	139.0	138.1	135.1	129.2	122.6	119.4	..	..	
162.5	153.8	157.8	158.7	159.3	156.4	157.0	149.9	143.1	136.7	132.7	120.1	113.8	108.6	..	..	
111.5	103.0	106.2	103.9	102.4	100.1	100.5	95.0	90.4	88.5	81.5	75.0	68.5	64.6	..	..	
70.9	65.4	65.5	61.3	61.1	55.9	55.4	53.2	51.9	47.4	45.3	38.5	34.9	30.5	..	..	
29.2	27.1	26.1	25.0	25.4	23.4	22.6	22.2	19.2	17.0	16.2	14.1	11.7	9.3	..	..	
3.2	2.7	2.7	2.4	2.4	2.2	2.3	2.0	2.3	1.8	1.7	1.5	1.2	0.8	..	..	
9.0	8.0	8.0	9.0	10.0	12.0	13.0	13.0	14.0	13.5	14.6	14.3	15.8	..	..	..	
97.0	92.0	98.0	102.0	108.0	120.0	131.0	123.0	127.0	128.2	130.0	135.2	140.4	..	..	..	
195.0	195.0	201.0	209.0	217.0	220.0	217.0	238.0	236.0	232.5	219.8	221.1	226.5	..	..	..	
211.0	205.0	206.0	213.0	210.0	211.0	214.0	223.0	221.0	213.0	207.9	197.0	198.7	..	..	..	
146.0	147.0	154.0	154.0	152.0	154.0	149.0	153.0	152.0	144.4	138.7	133.9	133.1	..	..	..	
58.0	53.0	53.0	55.0	58.0	59.0	58.0	61.0	58.0	54.9	53.0	48.4	48.0	..	..	..	
4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.3	4.4	4.1	4.4	..	..	..	
27.2	27.1	27.2	25.8	35.2	35.8	37.3	39.6	41.0	43.0	42.3	43.9	44.7	44.6	45.7	47.1	
159.2	163.2	163.7	162.5	175.3	177.9	176.8	179.9	179.9	178.8	178.3	177.0	175.5	166.7	168.3	160.7	
171.4	174.0	175.6	176.4	176.8	173.9	176.3	182.2	177.1	176.7	167.9	167.4	162.5	151.0	151.0	148.7	
118.5	119.9	121.5	120.3	113.9	111.5	113.0	113.8	111.6	107.2	102.9	98.6	95.7	88.5	83.9	78.5	
68.3	67.1	66.4	64.8	60.2	57.2	58.1	57.4	57.7	54.8	52.1	48.1	47.0	40.5	39.3	34.5	
24.8	24.6	25.0	23.6	19.6	19.6	18.4	18.5	17.7	17.0	15.2	14.1	13.5	10.4	9.9	8.7	
2.4	2.3	2.3	2.2	1.5	1.4	1.3	1.3	1.4	1.1	1.2	1.0	0.8	..	..	0.5	
39.5	38.6	38.8	37.6	38.6	40.4	41.8	46.3	47.1	48.1	45.7	39.8	34.9	33.9	34.5	33.5	
133.9	133.1	133.7	129.2	131.3	134.0	137.5	145.2	142.5	140.2	135.8	124.7	117.3	120.3	125.8	124.1	
135.6	137.0	138.5	137.0	140.2	141.7	149.1	158.6	153.4	149.4	145.4	135.0	129.0	129.4	132.8	130.3	
87.5	86.3	85.2	83.0	84.0	84.6	87.6	93.9	89.8	86.7	84.1	75.7	71.7	70.0	69.9	67.5	
44.0	42.3	41.2	39.3	39.7	38.7	39.6	41.0	39.5	38.4	35.6	32.1	28.2	27.4	26.4	24.4	
13.8	13.0	12.2	12.0	11.0	10.7	10.7	10.7	10.2	9.3	8.8	7.2	6.9	6.1	5.7	5.2	
1.0	0.9	1.0	0.8	0.9	0.7	0.8	0.6	0.7	0.6	0.6	0.3	0.4	0.4	0.3	0.2	
29.7	31.0	31.6	34.0	37.3	39.0	40.0	42.3	44.8	47.5	48.5	48.8	49.4	49.7	50.9	48.1	
152.6	158.3	160.2	165.5	172.3	177.4	178.2	179.5	176.2	174.3	165.4	160.9	154.6	153.4	154.4	141.8	
157.3	161.4	163.8	171.9	176.8	180.6	182.8	185.1	178.1	172.2	164.9	160.4	155.5	151.2	154.5	142.8	
91.4	93.6	94.7	100.9	103.1	104.6	105.5	107.1	101.5	96.4	92.0	87.9	83.4	78.7	77.7	70.0	
46.5	45.8	44.1	46.4	48.1	48.5	48.4	49.9	48.4	45.5	43.4	40.2	37.1	34.2	32.8	28.9	
12.2	12.0	12.3	13.8	14.1	14.1	13.4	13.1	12.5	11.7	11.3	10.5	9.5	8.7	8.1	7.2	
0.8	0.8	0.8	0.8	0.9	0.8	0.8	0.9	0.9	0.9	0.8	0.7	0.6	0.6	0.5	0.5	
27.5	28.9	30.2	32.1	33.8	35.3	35.8	38.7	40.8	44.2	47.2	46.6	46.5	47.2	47.6	46.9	
163.7	169.8	169.4	174.9	175.4	185.3	182.6	185.0	180.6	175.0	169.4	168.5	158.0	155.3	153.3	146.0	
171.4	175.9	177.8	183.8	185.3	192.3	195.3	197.2	191.0	182.7	181.3	176.9	167.6	159.1	156.1	146.9	
108.5	109.4	109.1	112.1	112.9	113.5	116.8	118.7	112.3	106.7	105.5	102.3	96.1	89.7	86.5	74.6	
58.4	56.6	54.5	55.8	56.8	57.1	55.0	57.6	56.0	51.9	51.0	48.5	44.5	39.6	38.4	30.9	
15.2	15.1	14.7	15.4	16.2	16.4	14.9	15.1	13.9	13.9	13.6	12.1	11.1	9.9	9.6	7.8	
0.9	0.9	0.8	0.9	0.8	1.1	0.9	0.9	1.0	0.8	0.9	0.7	0.7	0.6	0.4	0.4	

APPENDIX TABLE A.V.2 (*continued*)

Age-specific Fertility Rates, 1946-1973[a, b]

(Births per 1,000 women of given age)

Region, country and age	*1946*	*1947*	*1948*	*1949*	*1950*	*1951*	*1952*	*1953*	*1954*	*1955*	*1956*
Western Europe											
Austria[i]											
Less than 20	..	..	..	..	..	34.0	33.9	32.8	31.3	30.5	32.1
20-24	..	..	..	..	..	114.4	117.3	121.7	124.9	130.8	142.6
25-29	..	..	..	..	..	112.3	115.1	117.3	120.3	128.2	139.2
30-34	..	..	..	..	..	89.9	84.2	83.2	84.1	89.2	95.6
35-39	..	..	..	..	..	44.7	44.0	42.4	44.4	49.8	55.2
40-44	..	..	..	..	..	15.9	15.5	15.1	15.5	15.3	15.9
45 or more	..	..	..	..	..	1.4	1.3	1.3	1.2	1.2	1.1
Belgium[j]											
Less than 20	19.9	21.1	22.4	21.4	20.9	20.1	19.8	19.7	20.8	20.9	21.5
20-24	118.1	121.7	126.0	124.9	121.7	121.4	124.8	125.9	128.4	132.2	136.0
25-29	154.0	148.5	146.5	145.0	142.9	141.2	143.3	143.6	147.3	148.8	150.8
30-34	119.7	111.3	107.3	102.5	101.9	97.1	98.9	98.6	100.5	99.9	98.4
35-39	68.7	64.9	63.2	60.6	59.7	57.0	58.7	57.8	56.1	55.8	53.9
40-44	22.2	22.6	21.2	20.1	19.6	18.3	18.3	18.7	18.5	18.7	18.1
45 or more	1.9	1.7	1.7	1.7	1.5	1.5	1.2	1.4	1.4	1.3	1.2
France											
Less than 20	29.5	33.9	34.6	34.7	34.5	32.8	32.2	31.4	31.1	30.6	31.0
20-24	148.3	169.9	171.5	173.3	171.2	166.4	164.7	162.8	164.1	164.2	165.2
25-29	182.2	178.6	177.3	177.8	174.2	164.9	164.1	160.9	162.2	162.0	162.4
30-34	137.7	125.2	123.3	121.3	118.5	111.4	110.0	105.6	105.1	102.4	100.8
35-39	74.7	71.4	70.0	67.5	65.5	61.5	61.0	58.2	58.6	56.3	54.4
40-44	22.2	22.7	22.3	21.3	20.6	19.4	19.1	17.7	17.9	17.3	16.6
45 or more	1.6	1.7	1.7	1.7	1.6	1.4	1.4	1.3	1.3	1.2	1.2
Germany, Federal Republic of[k]											
Less than 20	..	..	..	23.8	25.6	27.2	26.8	25.8	25.7	24.9	26.1
20-24	..	..	..	110.6	107.8	111.3	114.2	115.1	118.8	118.9	125.3
25-29	..	..	..	129.6	124.9	123.2	125.3	126.4	129.5	131.2	138.5
30-34	..	..	..	93.4	91.1	86.7	88.2	88.2	90.7	91.4	94.1
35-39	..	..	..	54.3	52.0	46.3	47.1	45.8	46.3	45.7	47.3
40-44	..	..	..	16.6	16.6	15.4	14.8	14.2	14.0	13.8	14.0
45 or more	..	..	..	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Netherlands[l]											
Less than 20	13.1	14.8	13.8	12.4	12.3	13.1	13.8	13.4	13.2	14.0	14.2
20-24	110.2	108.8	99.9	96.7	94.1	97.1	100.0	98.6	100.6	102.8	106.0
25-29	224.6	206.4	193.5	188.5	181.3	180.3	185.2	183.4	187.0	189.8	194.0
30-34	227.9	201.1	188.0	172.4	166.2	160.6	161.6	159.8	158.7	156.8	157.0
35-39	155.0	144.7	131.4	119.7	114.5	110.2	108.5	104.8	101.9	100.4	97.5
40-44	58.4	59.5	54.9	49.3	46.1	43.9	43.5	42.1	40.4	39.0	37.9
45 or more	4.5	4.4	4.5	4.2	3.9	3.8	3.9	3.6	3.5	3.4	3.1
Switzerland											
Less than 20	11.0	12.3	12.4	12.1	12.1	12.1	12.4	12.1	12.6	13.2	13.7
20-24	99.4	102.0	104.8	104.7	101.7	99.2	101.0	100.3	100.6	103.5	106.7
25-29	168.7	165.1	164.7	159.7	156.2	150.8	154.0	152.3	152.7	155.1	159.8
30-34	138.1	130.3	128.8	122.9	120.4	114.3	115.1	112.6	111.8	110.9	112.7
35-39	78.3	75.4	71.5	67.2	66.4	61.7	61.1	59.1	58.4	56.6	57.0
40-44	26.1	24.9	23.8	22.2	21.8	20.3	19.5	20.3	19.0	19.5	18.5
45 or more	1.9	2.0	1.8	1.7	1.7	1.8	1.8	1.5	1.6	1.6	1.5

APPENDIX TABLE A.V.2 (*continued*)

Age-specific Fertility Rates, 1946-1973 [a, b]

(*Births per 1,000 women of given age*)

1957	*1958*	*1959*	*1960*	*1961*	*1962*	*1963*	*1964*	*1965*	*1966*	*1967*	*1968*	*1969*	*1970*	*1971*	*1972*	*1973*
35.3	40.9	46.8	47.7	52.8	53.7	55.1	54.9	56.6	63.9	64.3	65.2	64.7	61.2	58.9	58.2	54.2
146.4	150.1	154.4	159.4	164.2	164.4	164.2	161.9	158.6	160.1	164.6	169.0	167.3	158.7	156.6	151.0	132.8
145.8	145.9	150.8	158.3	163.0	164.2	165.5	162.2	154.5	146.6	141.0	132.9	123.3	111.4	105.6	104.0	97.8
96.4	97.0	97.7	100.3	103.8	104.4	105.3	104.4	100.0	97.0	94.3	91.2	86.2	77.9	71.9	64.4	58.3
56.7	54.3	54.4	53.0	54.5	53.2	52.8	52.0	50.3	48.8	47.0	45.8	44.7	40.7	39.8	36.8	33.2
15.5	14.4	15.6	17.5	18.7	18.7	17.2	17.2	15.5	14.6	13.5	12.7	11.9	11.4	11.7	11.1	9.8
1.3	1.1	1.2	1.1	1.0	0.8	0.8	1.1	1.3	1.2	1.1	1.1	0.8	0.8	0.8	0.7	0.7
22.7	24.6	26.6	27.7	28.6	28.7	29.7	30.4	30.6	31.2	30.8	29.9	30.2	31.1	..	..	..
140.8	145.3	150.8	151.0	155.7	156.4	165.8	168.9	167.0	163.2	160.8	152.1	148.5	149.4	..	..	..
154.6	159.1	165.0	163.4	167.8	164.3	170.2	171.8	165.2	159.2	152.8	147.1	143.7	143.1	..	..	..
99.2	99.3	101.8	100.7	103.2	100.7	103.5	104.4	97.7	92.5	86.1	83.4	79.1	78.1	..	..	..
52.8	52.4	51.7	50.7	51.8	50.8	50.9	51.2	47.7	44.3	41.6	38.5	36.6	36.4	..	..	..
18.5	17.6	16.5	16.5	16.0	15.3	14.9	14.7	13.6	12.6	11.3	10.9	10.1	9.9	..	..	..
1.2	1.2	1.2	1.2	1.1	1.1	1.0	1.0	0.8	0.9	0.8	0.7	0.7	0.7	..	..	..
29.8	30.3	32.6	34.9	36.5	36.5	39.1	40.6	41.0	39.2	37.2	36.8	37.0	37.7	..	..	..
165.2	164.8	169.3	172.7	179.1	178.8	186.8	190.3	187.5	185.0	176.2	170.8	166.2	164.7	..	..	..
167.6	168.0	170.6	169.7	175.4	174.3	179.3	178.4	173.6	170.1	162.9	157.1	153.4	149.6	..	..	..
102.3	101.9	103.8	100.7	103.2	101.5	104.9	104.8	101.9	100.9	96.2	93.1	91.5	87.5	..	..	..
54.0	53.1	53.0	50.5	51.3	49.6	50.5	50.5	48.5	47.8	45.9	44.4	43.2	41.4	..	..	..
16.5	16.6	16.9	15.8	15.8	15.0	14.9	14.7	14.0	13.8	12.9	12.5	12.1	11.4	..	..	..
1.1	1.2	1.1	1.1	1.1	1.1	1.1	1.2	1.1	1.0	0.9	0.9	0.9	0.9	..	..	..
27.2	26.7	29.0	30.5	34.0	35.5	39.3	42.5	44.1	46.9	47.2	47.4	47.5	47.1	46.1	41.0	..
132.9	132.6	137.1	135.7	144.2	144.3	148.7	150.4	149.6	154.8	156.2	150.8	137.8	126.8	121.8	108.8	..
146.7	147.6	153.1	151.9	156.5	154.9	158.8	159.2	155.1	155.0	149.0	140.1	126.7	113.0	108.4	99.0	..
96.7	96.2	97.4	95.7	96.3	95.0	97.8	98.8	95.7	94.8	91.6	86.8	81.0	71.1	65.9	58.3	..
48.1	47.3	48.7	47.0	46.9	45.3	45.8	45.7	44.1	43.5	42.3	41.3	39.0	35.3	32.5	28.0	..
13.8	13.2	13.4	12.8	12.6	12.4	12.6	12.6	12.1	11.6	11.0	10.8	10.2	9.2	8.8	7.7	..
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	..
14.8	15.1	16.3	17.0	18.6	19.5	20.8	20.9	20.7	21.1	21.7	21.7	22.7	22.7	22.3	19.9	..
111.0	115.9	120.8	121.7	129.0	132.9	138.1	141.5	142.9	141.7	144.4	139.3	149.4	136.0	132.1	124.7	..
200.2	203.8	209.9	208.0	214.0	212.5	214.5	213.3	206.8	200.1	192.0	190.5	201.6	184.0	172.0	163.0	..
156.0	155.3	157.9	152.2	157.4	152.8	152.1	149.1	138.4	128.1	120.1	114.2	116.7	108.4	95.7	82.8	..
94.4	92.8	92.1	88.6	86.4	84.0	82.1	79.4	72.7	65.1	58.9	55.0	53.3	49.0	41.1	33.5	..
36.7	34.8	34.2	32.7	31.5	29.6	28.5	26.5	23.9	21.3	19.4	16.5	15.6	14.0	12.0	9.2	..
3.1	2.9	3.1	2.7	2.8	2.6	2.5	2.3	2.0	1.9	1.6	1.5	1.4	1.2	0.9	0.5	..
15.8	15.4	16.0	16.3	17.5	18.1	19.7	20.6	21.2	21.4	21.8	21.4	22.1	22.1	21.6	..	..
113.7	115.6	117.8	123.3	132.2	140.9	147.1	149.1	147.0	142.0	139.0	134.3	127.6	123.8	121.0	..	..
163.1	164.5	167.3	166.0	173.0	177.2	182.6	181.3	176.8	170.9	161.8	153.6	146.5	139.3	135.7	..	..
111.8	110.3	110.4	110.5	110.8	110.5	112.6	112.9	108.7	104.8	98.8	94.0	89.8	84.1	79.7	..	..
55.9	55.1	54.1	53.5	54.1	53.9	53.6	54.0	51.2	48.8	45.1	43.2	40.5	38.0	35.5	..	..
19.4	17.7	17.6	17.4	16.7	16.8	16.4	15.9	15.0	14.5	13.9	12.3	11.3	10.2	9.4	..	..
1.5	1.3	1.5	1.3	1.5	1.3	1.2	1.1	1.2	1.0	1.1	1.1	0.9	0.9	0.8	..	..

Appendix table A.V.2 (*concluded*)

Age-specific Fertility Rates, 1946-1973 [a, b]

(Births per 1,000 women of given age)

Region, country and age	*1946*	*1947*	*1948*	*1949*	*1950*	*1951*	*1952*	*1953*	*1954*	*1955*	*1956*
Southern Europe											
Italy[m]											
Less than 20	18.5	19.7	19.6	17.7	16.9	15.9	15.8	15.3	15.7	16.1	16.5
20-24	110.1	113.2	117.0	108.8	106.2	101.1	97.7	96.4	101.3	102.5	104.4
25-29	176.4	168.8	166.4	154.0	147.6	140.0	137.5	137.3	140.7	140.8	142.0
30-34	151.1	139.8	132.7	125.0	116.4	110.2	109.0	107.5	109.6	108.7	107.0
35-39	102.5	93.8	90.3	81.8	76.8	70.5	68.9	66.8	68.0	66.3	64.2
40-44	39.8	38.9	37.1	33.9	31.5	28.7	26.7	25.4	25.8	24.8	24.1
45 or more	3.8	4.1	3.5	3.2	3.0	2.6	2.4	2.1	2.2	2.0	2.0
Malta											
Less than 20	..	..	..	..	..	..	..	..	..	..	..
20-24	..	..	..	..	..	..	..	..	..	..	..
25-29	..	..	..	..	..	..	..	..	..	..	..
30-34	..	..	..	..	..	..	..	..	..	..	..
35-39	..	..	..	..	..	..	..	..	..	..	..
40-44	..	..	..	..	..	..	..	..	..	..	..
45 or more	..	..	..	..	..	..	..	..	..	..	..
Spain[n]											
Less than 20	8.7	8.5	9.6	9.0	8.0	8.1	8.6	8.7	8.5	8.3	9.3
20-24	86.2	91.0	97.8	90.7	83.5	82.5	87.2	90.2	91.3	96.5	102.4
25-29	153.1	157.0	172.1	165.1	155.8	158.1	164.3	164.6	162.1	166.6	170.5
30-34	142.8	138.5	145.7	132.5	125.3	125.6	132.1	131.3	131.0	134.7	134.9
35-39	101.6	96.9	105.0	95.1	85.6	83.6	83.5	79.2	73.9	75.3	74.7
40-44	40.9	36.8	40.7	37.4	33.6	32.7	33.6	32.1	30.5	31.1	28.4
45 or more	7.1	5.2	5.9	5.6	4.5	4.2	4.1	4.1	3.6	4.0	3.4
Yugoslavia[o]											
Less than 20	..	..	..	..	39.6	34.6	38.7	39.1	40.6	41.3	40.7
20-24	..	..	..	..	201.9	180.7	198.9	190.3	198.4	186.5	182.2
25-29	..	..	..	..	206.3	179.6	199.1	189.1	187.4	175.8	168.8
30-34	..	..	..	..	153.0	135.9	148.1	129.8	126.4	112.4	106.3
35-39	..	..	..	..	94.5	80.2	85.8	82.5	78.8	78.6	72.0
40-44	..	..	..	..	43.5	37.8	39.7	36.9	33.6	30.3	27.1
45 or more	..	..	..	..	13.6	11.2	10.5	9.7	8.4	9.1	7.6
USSR											
Less than 20	..	..	..	..	..	..	..	..	..	16.0	17.9
20-24	..	..	..	..	..	..	..	..	..	148.1	151.4
25-29	..	..	..	..	..	..	..	..	..	169.1	167.5
30-34	..	..	..	..	..	..	..	..	..	122.7	117.2
35-39	..	..	..	..	..	..	..	..	..	75.9	72.8
40-44	..	..	..	..	..	..	..	..	..	32.5	28.3
45 or more	..	..	..	..	..	..	..	..	..	9.1	8.3

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[a] Wherever possible, the rates were calculated by single years of age, and the rates for five-year age-groups have been taken as the mean of the single-year rates for the given group. Rates for the age-groups "less than 20" and "45 or more" have been calculated by relating all births to women below 20 and above 44 to the female populations 15-19 and 45-49 respectively.

[b] Irregularities in the series around 1970 may be due to the introduction of population estimates based on the 1970 round of censuses.

[c] Estimates of population by age for 1947 to 1955, of live births for 1950-1952, and of rate for age "less than 20" for 1972 prepared by the ECE secretariat.

[d] Estimates of live births for 1947 to 1959 prepared by the ECE secretariat.

[e] Estimates of population by age for 1946-1948 and 1950-1959 and of live births for 1946-1958 prepared by the ECE secretariat.

[f] Rates for 1948 from I. Ferenbac, *Studies in Fertility and Social Mobility* (Budapest, 1964); and for 1956-1970 from V. Ghetau, *Revista de Statistica*, 1971.

APPENDIX TABLE A.V.2 (*concluded*)

Age-specific Fertility Rates, 1946-1973 [a, b]

(*Births per 1,000 women of given age*)

1957	*1958*	*1959*	*1960*	*1961*	*1962*	*1963*	*1964*	*1965*	*1966*	*1967*	*1968*	*1969*	*1970*	*1971*	*1972*	*1973*
16.7	16.2	17.4	18.1	18.8	19.5	21.5	24.5	25.4	26.0	25.6	25.8	25.8	26.8	27.1	..	
105.2	103.8	107.8	108.9	112.1	113.3	118.7	127.4	134.0	131.5	129.9	129.5	130.4	130.8	131.9	..	
143.6	144.4	150.7	152.6	156.9	157.2	161.7	167.6	167.8	163.3	157.5	154.3	155.3	150.5	150.2	..	
107.8	106.7	108.5	109.4	110.8	112.4	114.4	119.8	119.0	117.3	110.7	107.2	106.9	99.9	97.2	..	
62.8	61.2	61.8	60.9	60.9	61.2	60.8	63.4	63.1	63.0	58.7	56.9	57.7	53.3	51.5	..	
23.0	21.6	21.2	21.4	20.5	20.3	19.3	19.9	19.7	19.2	18.1	17.3	17.3	17.2	15.8	..	
1.9	1.8	1.8	1.9	1.7	1.7	1.5	1.5	2.1	2.1	1.7	1.4	1.3	1.2	1.1	..	
..	..	..	..	..	..	..	16.3	13.4	13.6	13.9	13.5	13.0	13.4	12.7	12.6	
..	..	..	..	..	..	..	158.1	124.8	117.8	109.8	102.9	100.9	101.9	105.6	103.3	
..	..	..	..	..	..	..	158.7	157.7	157.9	146.5	143.4	131.7	131.5	134.0	131.8	
..	..	..	..	..	..	..	114.8	84.6	77.4	98.6	88.9	82.8	88.4	88.5	90.3	
..	..	..	..	..	..	..	75.8	83.6	72.2	55.5	54.2	54.9	51.7	53.7	46.9	
..	..	..	..	..	..	..	31.1	27.7	14.1	20.4	19.0	17.5	16.6	15.8	14.7	
..	..	..	..	..	..	..	3.1	2.0	2.1	2.4	1.9	2.7	1.4	1.5	1.7	
8.1	8.2	9.2	9.4	9.6	12.4	10.1	11.1	11.2	11.6	11.8	13.1	13.2	13.9	..	..	
109.9	112.6	108.6	106.2	105.5	108.6	108.1	115.1	109.1	111.2	108.2	118.6	121.1	120.7	..	..	
181.7	185.2	186.9	189.2	184.4	187.3	193.8	201.3	197.5	196.8	197.4	194.6	196.5	197.3	..	..	
142.9	141.7	141.9	144.1	142.0	140.6	147.6	151.8	146.4	143.4	148.4	138.9	134.3	131.4	..	..	
79.7	80.6	80.6	81.0	80.6	79.7	81.2	86.0	84.6	83.3	87.1	80.4	78.7	76.4	..	..	
30.3	29.5	28.6	29.4	29.4	29.0	30.1	31.7	30.6	29.2	31.5	27.9	26.4	25.9	..	..	
3.5	3.3	3.2	3.1	3.0	3.0	3.0	3.2	4.1	3.4	5.6	3.3	2.8	3.0	..	..	
41.3	42.2	46.4	48.9	50.4	51.5	51.2	50.3	53.4	57.3	55.7	56:2	56.1	51.6	53.8	56.1	
170.2	174.1	173.9	178.2	177.6	177.5	178.0	180.7	188.1	183.5	177.6	173.8	170.6	161.3	170.3	167.4	
154.9	156.6	151.9	155.5	151.4	148.6	148.6	147.1	152.5	148.0	142.3	136.4	134.5	124.6	129.6	130.1	
96.1	94.6	91.9	93.7	90.1	87.9	86.4	84.7	85.7	82.5	80.0	76.7	75.7	71.9	73.2	71.8	
61.7	58.2	54.9	51.8	48.1	45.1	44.3	43.5	42.7	41.2	40.2	37.9	37.0	34.0	33.5	33.1	
22.9	23.9	24.4	26.4	24.3	21.6	19.1	17.3	14.9	13.5	12.7	12.2	11.5	10.8	10.9	10.3	
5.9	5.7	4.9	5.3	5.3	5.1	5.6	5.5	5.7	4.8	3.9	3.3	2.7	2.4	1.9	1.5	
22.0	25.9	31.8	35.8	35.4	24.4	22.7	22.8	24.8	26.9	26.7	29.7	29.4	31.6	32.0	32.4	
157.1	161.4	163.1	159.7	162.5	161.5	164.4	159.8	158.8	162.3	153.6	152.5	158.7	167.6	170.2	173.9	
172.4	168.0	163.2	165.5	162.0	155.3	149.8	142.7	134.1	134.2	131.7	129.5	127.8	132.6	132.1	137.1	
112.7	112.0	109.0	112.5	106.4	105.8	101.5	97.4	97.1	102.6	97.4	95.4	91.3	86.7	87.1	84.3	
72.0	67.3	65.4	63.9	56.6	53.5	52.1	49.9	51.0	50.1	49.3	48.8	47.9	48.2	49.6	49.4	
24.7	24.0	23.8	25.5	24.0	24.2	22.7	21.5	19.5	18.4	16.6	16.6	15.3	16.3	14.9	14.6	
7.5	6.6	5.9	5.7	5.1	4.7	5.1	5.1	6.5	5.6	5.1	4.6	3.8	3.2	2.4	2.0	

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[g] Estimates of population by age for 1955, 1957 to 1960, 1962 to 1965 and 1967 prepared by the ECE secretariat.

[h] Estimates of population by age for 1946 to 1960 prepared by the ECE secretariat

[i] Estimates of population aged 15-19 and 20-24 for 1961 and of rate for age "45 or more" for 1973 prepared by the ECE secretariat.

[j] Estimate of rate for age "less than 20" for 1970 prepared by the ECE secretariat.

[k] Estimates of rates for age "45 or more" prepared by the ECE secretariat. Data for 1949 exclude the Saar and West Berlin; data for 1950 to 1959 exclude West Berlin.

[l] Estimate of rate for age "less than 20" for 1972 prepared by the ECE secretariat.

[m] Estimates of population by age for 1946 to 1964 prepared by the ECE secretariat.

[n] Estimates of population by age for 1961 to 1969 prepared by the ECE secretariat.

[o] Estimates of population aged 30-34, 35-39 and 40-44 for 1950 prepared by the ECE secretariat.

Appendix table A.V.3

Cumulative marital fertility by duration of marriage for selected marriage cohorts

(*Rate per 1,000 marriages*) [a]

Country and marriage cohort	*Duration of marriage (years)* [b]																				
	0	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*
Austria																					
1953	192	492	691	873	1029	1161	1278	1374	1460	1536	1597	1649	1692	1726	1752	1773	1788	1800			
1958	221	581	816	1017	1188	1334	1457	1553	1633	1700	1755	1799	1832								
1963	250	641	887	1090	1264	1404	1516	1597													
1968	246	617	838																		
Belgium																					
1948	120	510	755	950	1119	1265	1395	1510	1609	1695	1771	1837	1893	1941	1981	2015	2042	2063	2079	2089	
1953	110	501	750	965	1151	1317	1467	1591	1704	1801	1886	1959	2017	2062	2097	2125	2147				
1958	107	528	792	1027	1229	1411	1568	1696	1801	1884	1953	2008									
1963	117	565	845	1082	1280	1443	1579														
1968	125	518																			
Czechoslovakia																					
1948		440	750	995	1195	1364	1510	1634	1735	1817	1879	1931	1969	2001	2024	2042	2058	2072	2083	2091	2095
1953		448	749	983	1194	1365	1504	1605	1687	1754	1807	1857	1900	1933	1955	1972	1984	1994	2001		
1958		472	780	1015	1203	1366	1515	1640	1734	1803	1855	1893	1925	1951							
1963		510	798	1015	1189	1328	1438	1531	1606												
1968		524	778	973																	
Denmark																					
1948		389	631	830	1006	1162	1292	1401	1493	1567	1628	1681	1720	1754	1781	1803	1821	1835	1845	1853	1858
1953		409	656	868	1061	1231	1367	1475	1569	1646	1708	1763	1808	1843	1874	1893	1907	1916	1922		
1958		430	674	897	1099	1277	1423	1543	1640	1719	1775	1816	1850	1874							
1963		455	707	944	1164	1334	1456	1546	1623												
1968		381	588	789																	
Finland																					
1948		499	799	1043	1246	1424	1574	1703	1815	1913	1996	2065	2126	2178	2223	2260	2290	2314	2333	2347	2357
1953		517	824	1085	1305	1483	1626	1752	1863	1953	2031	2099	2153	2198	2236	2265	2286	2303			
1958		513	813	1063	1279	1447	1589	1710	1802	1882	1944	1990	2023								
1963		527	827	1066	1254	1409	1524	1608													
1968		485	705																		
France[c]																					
1948		400	714	962	1171	1352	1507	1639	1752	1851	1936	2011	2073	2125	2170	2208	2240	2265	2284	2299	2311
1953		399	710	967	1197	1396	1567	1710	1835	1941	2033	2112	2178	2233	2277	2315	2345	2368			
1958		410	733	1004	1239	1444	1621	1767	1891	1991	2073	2140	2194								
1963		430	760	1032	1262	1457	1619	1759													
1968		423	734																		

Germany, Federal Republic of[d]																					
1948	176	527	736	897	1036	1156	1262	1353	1434	1502	1559	1608	1649	1683	1711	1735	1754	1768	1778	1785	
1953	177	492	716	908	1073	1218	1348	1458	1550	1621	1690	1750	1796	1834	1865	1888	1906	1919	1929		
1958	184	525	760	977	1179	1338	1479	1594	1688	1765	1827	1876	1912	1941							
1963	184	542	788	995	1150	1329	1445	1533	1600												
1968	200	518	707	873																	
Hungary[e]																					
1948	102	522	769	965	1136	1301	1430	1529	1590	1640	1677	1707	1730	1747	1761	1771	1779	1785	1790	1794	
1953	96	509	758	948	1079	1183	1266	1335	1389	1429	1466	1495	1517	1536	1553	1565	1575	1582	1587		
1958	82	466	690	851	973	1078	1167	1241	1306	1361	1408	1444	1471	1491							
1963	73	454	666	824	959	1079	1174	1253	1313												
1968	96	514	731	893																	
Italy[f]																					
1948	129	609	859	1068	1245	1402	1546	1670	1777	1871	1952	2024	2086	2139	2183	2220	2252	2277	2296	2310	
1953	112	586	841	1060	1246	1411	1557	1685	1796	1893	1978	2056	2119	2172	2214	2248	2276	2297			
1958	104	604	873	1102	1299	1475	1635	1767	1879	1970	2046	2112	2164								
1963	99	625	898	1126	1322	1490	1633	1748													
1968	106	626	896																		
Netherlands																					
1948	130	538	837	1104	1345	1556	1735	1894	2033	2153	2256	2345	2418	2481	2532	2575	2607	2631	2648	2660	
1953	116	515	805	1074	1319	1535	1722	1880	2016	2133	2232	2315	2377	2425	2460	2487	2508	2524			
1958	110	519	827	1115	1373	1699	1790	1940	2058	2149	2221	2280	2324								
1963	120	541	852	1127	1372	1575	1740	1871													
1968	105	452	734																		
Norway																					
1948	206	576	808	1000	1180	1343	1480	1599	1698	1783	1853	1914	1964	2005	2041	2069	2091	2108	2121	2130	
1953	209	599	845	1064	1262	1432	1580	1701	1808	1893	1970	2034	2089	2133	2166	2191	2210	2223	2233		
1958	245	669	932	1178	1401	1591	1753	1888	2002	2094	2168	2229	2274	2310							
1963	267	713	999	1260	1481	1664	1812	1920	2009												
1968	264	688	939	1171																	
Poland[g]																					
1953	240	730	1050	1325	1561	1755	1909	2028	2123	2201	2264	2312	2348	2379	2406	2431	2453	2469	2483		
1958	249	736	1048	1288	1483	1650	1786	1898	1989	2064	2122	2166	2207	2241							
1963	156	641	916	1129	1297	1438	1555	1655	1738												
1968	177	658	920	1121																	
Sweden																					
1948		417	637	818	976	1115	1239	1338	1421	1480	1547	1594	1631	1661	1685	1704	1721	1735	1745	1752	1756
1953		408	612	798	969	1119	1246	1352	1434	1501	1558	1605	1647	1681	1706	1725	1738	1747	1753		
1958		394	609	794	974	1132	1271	1391	1486	1561	1615	1657	1687	1709							
1963		418	658	881	1088	1260	1386	1479	1551												
1968		352	578	790																	

APPENDIX TABLE A.V.3 (*continued*)

Cumulative marital fertility by duration of marriage for selected marriage cohorts

(*Rate per 1,000 marriages*) [a]

Country and marriage cohort	*Duration of marriage (years)* [b]																				
	0	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*
Switzerland[h]																					
1948	158	561	844	1084	1294	1470	1614	1733	1829	1909	1976	2028	2071	2107	2134	2157	2174	2187	2196	2203	
1953	163	566	851	1106	1328	1510	1658	1779	1878	1952	2016	2069	2110	2143	2165	2181	2191	2202			
1958	173	599	894	1159	1386	1572	1721	1834	1923	1991	2044	2083	2112								
1963	198	649	956	1221	1439	1602	1727	1819													
1968	180	544	277																		
United Kingdom																					
England and Wales																					
1948 . .		292	570	773	951	1106	1244	1359	1453	1536	1607	1668	1719	1764	1802	1834	1860	1881	1897	1909	1918
1953 . .		265	507	712	911	1095	1259	1396	1517	1621	1707	1780	1840	1887	1924	1952	1974	1990	2001		
1958 . .		295	563	808	1044	1262	1451	1610	1736	1835	1912	1973	2018	2053							
1963 . .		332	618	882	1130	1335	1503	1634	1736												
1968 . .		309	551	794																	
Scotland																					
1948 . .		352	665	893	1087	1255	1403	1531	1639	1730	1808	1874	1928	1974	2013	2045	2071	2091	2107	2118	2125
1953 . .		312	628	871	1095	1296	1471	1618	1746	1849	1937	2009	2073	2122	2159	2187	2209	2225	2236	2244	
1958 . .		320	638	906	1147	1365	1551	1703	1825	1917	1991	2049	2094	2127	2151						
1963 . .		337	656	922	1157	1359	1521	1648	1746	1821											
1968 . .		334	601	837	1066																
Yugoslavia[i]																					
1953		472	792	1033	1263	1441	1598	1724	1835	1926	2004	2071	2130	2178	2216	2247	2271	2291			
1958		452	755	987	1194	1369	1518	1639	1739	1821	1890	1947	1996								
1963		470	755	977	1169	1326	1454	1556													
1968		489	773																		

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[a] These are given as the cumulated sums of annual net duration-specific marital fertility rates, calculated by relating the legitimate live births of each year to the initial number of women marrying below age 50 years in each cohort for all countries except the Federal Republic of Germany. Data available from annual surveys permitted the calculation of gross rates based on the surviving marriages of all women irrespective of age at marriage for the Federal Republic of Germany. The net rates under-estimate actual marital fertility to the extent that divorce, widowhood and emigration reduce any given marriage cohort more than it increases through immigration. The impact of divorce and widowhood tends to vary little from one cohort to another during the first 10 years of marriage within which fertility is largely concentrated. Migration is subject to greater variation however. In a few cases, namely France, the Federal Republic of Germany and Switzerland, it was possible to make adjustments or migration, as noted under the individual countries. The rates ultimately obtained by this procedure are generally comparable from one year to another and from one cohort to another within a given country. But comparisons in the level of fertility from one country to another will clearly be affected if a country with considerable immigration is contrasted with one subject to heavy emigration (France and Italy, for example) or if one country has a high and another a low level of divorce (case of Sweden and the Netherlands). For a more detailed discussion of the method, see United Nations, *Recent Trends in Fertility in Industrialized Countries* (United Nations publication, Sales No. 57.XIII.2).

[b] "Years of marriage" refers to completed years for countries where 0 duration has been recorded, and to exact duration for those where the series starts with duration 1.

[c] Rates corrected to take account of repatriation from Indo-China and North Africa, especially Algeria, around 1962; c.f. C. Blayo, "Fécondité des mariages de 1946 à 1964 en France", *Population*, Paris, 23rd year, No. 4 (July-August 1968).

[d] Rates for 1947 to 1956 taken from Karl Schwarz, Congress of Vienna (1959) and for 1957 to 1965 from Karl Schwarz, *Wirtschaft und Statistik*, 1967, No. 3. Estimates of rates for 1966 to 1969 and for duration of 11 years and longer for 1957, 12 years and longer for 1958, 13 years and longer for 1959, 14 years and longer for 1960, 15 years and longer for 1961, and 16 years and longer for 1962 and 1965 prepared by the ECE secretariat. Data for 1947 to 1960 exclude West Berlin.

[e] Estimates of live births prepared by the ECE secretariat.

[f] Data for 1946 to 1953 exclude Trieste.

[g] Estimates of rates corresponding to marriages concluded before 1945 and of rates for durations of 10 years and longer prepared by the ECE secretariat.

[h] Swiss marriages only.

[i] Estimates of rates corresponding to marriages concluded before 1947 and of total rates for 1954 and 1956 prepared by the ECE secretariat.

APPENDIX TABLE A.V.4

Cumulative marital fertility by duration of marriage and birth order for selected marriage cohorts

(Rate per 1,000 marriages) [a]

Country and marriage cohort	Birth order	Duration of marriage (years) [b] 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Belgium[c]																						
1948	1		349	555	639	687	720	742	758	769	778	783	788	792	794	796	797	798	799	799	800	800
	2		3	61	174	258	322	372	409	436	457	473	485	494	501	506	511	513	516	517	518	518
	3		–	3	18	59	102	140	175	202	226	246	262	274	284	292	299	303	307	309	311	312
	4		–	–	2	7	23	44	65	86	105	120	135	146	156	164	170	176	180	183	185	186
1953	1		346	562	649	700	735	760	776	789	798	805	809	813	815	817	819	820				
	2		4	65	194	288	357	413	454	485	509	527	541	552	560	566	570	573				
	3		–	3	19	66	115	160	198	230	256	278	296	311	322	331	337	341				
	4		–	–	1	7	25	49	73	95	117	135	152	165	174	183	188	193				
1958	1		370	595	680	732	767	790	808	819	828	834	839									
	2		3	72	219	326	405	463	507	538	560	577	590									
	3		–	3	20	73	132	183	225	256	282	302	318									
	4		–	–	1	7	26	52	78	101	120	136	149									
1963	1		398	629	713	763	796	819														
	2		4	86	241	355	434	490														
	3		–	3	21	66	119	165														
	4		–	–	1	6	17	35														
Finland[d]																						
1948	1		480	645	702	728	744	753	759	764	767	769	770	772	773	774	775	775	775	775	775	775
	2		17	144	300	401	472	520	555	575	591	603	611	617	621	624	626	628	629	630	630	631
	3		2	7	38	103	168	221	263	297	324	344	360	373	383	391	398	402	405	407	409	410
	4		–	–	2	11	34	65	96	124	147	167	183	196	208	217	224	230	234	238	241	242
1953	1		501	670	731	760	775	785	791	795	798	801	803	805	806	807	807	807	807			
	2		14	147	314	427	502	551	585	613	630	642	651	657	662	665	668	670	671			
	3		1	6	38	106	167	216	260	295	323	347	366	379	391	400	406	410	414			
	4		–	–	2	11	34	60	87	113	134	152	168	181	191	200	207	212	216			
1958	1		506	681	745	776	793	804	812	816	820	822	823	824								
	2		7	126	285	405	484	539	578	604	623	635	644	650								
	3		–	5	30	87	140	189	232	264	292	313	328	338								
	4		–	–	1	8	24	45	67	85	102	116	127	135								
1963	1		521	707	775	808	827	835	841													
	2		6	117	269	384	471	528	564													
	3		–	3	21	58	97	131	160													
	4		–	–	1	4	12	22	32													

Appendix table A.V.4 *(continued)*

Cumulative marital fertility by duration of marriage and birth order for selected marriage cohorts

(Rate per 1,000 marriages) [a]

Country and marriage cohort	Birth order	Duration of marriage (years) [b]																				
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
France[e]																						
1948	1		383	600	670	707	730	745	755	763	769	774	778	781	783	785	787	788	789	789	789	789
	2		14	103	248	348	419	468	503	528	548	562	573	581	586	590	593	595	596	597	598	598
	3		2	9	38	97	155	205	245	278	304	325	342	355	365	373	379	384	387	389	391	392
	4		–	1	4	15	38	66	93	117	138	156	172	184	194	203	210	215	219	222	224	226
1953	1		390	603	684	733	766	788	804	815	824	830	835	838	840	842	843	844	845			
	2		8	100	248	361	441	498	538	568	590	606	618	627	634	639	643	645	647			
	3		1	6	32	92	154	208	251	287	315	338	356	370	381	389	396	401	404			
	4		–	1	3	10	31	60	87	112	134	153	169	182	193	201	208	214	218			
1958	1		404	640	737	790	825	849	864	875	882	888	892	895								
	2		6	91	247	365	451	514	559	592	615	632	644	653								
	3		–	2	23	80	141	196	241	277	306	328	346	360								
	4		–	–	7	7	27	53	79	103	123	140	154	165								
1963	1		424	661	757	812	847	871	888													
	2		5	96	249	368	456	521	571													
	3		–	2	23	73	127	175	218													
	4		–	–	1	7	23	42	62													
Germany, Federal Republic of[f]																						
1953	1	166	440	562	628	668	695	713	725	733	738	742	747	749	750	751	752	753	753	753		
	2	9	47	137	231	310	375	428	468	498	518	535	549	558	565	570	573	575	576	577		
	3	1	4	14	41	76	112	147	178	205	226	246	263	276	286	294	300	304	307	309		
	4	–	–	1	5	14	27	43	59	74	86	99	110	119	127	134	139	143	146	149		
1958	1	175	475	594	664	707	731	747	758	765	770	774	777	779	780							
	2	7	44	149	267	369	443	502	545	575	597	613	624	631	636							
	3	1	4	14	46	91	134	175	210	240	265	285	301	312	321							
	4	–	–	1	5	15	29	46	63	79	93	105	115	123	129							
1963	1	177	494	620	686	726	751	766	776	782												
	2	6	44	154	266	366	442	497	536	562												
	3	1	3	12	38	76	113	146	173	195												
	4	–	–	1	3	10	20	30	39	48												
Italy[g]																						
1948	1	126	585	729	780	804	818	827	833	837	840	842	844	845	846	847	848	848	848	848	848
	2	3	23	124	264	370	448	506	548	578	600	617	629	638	645	650	653	656	658	659	660
	3	–	1	6	24	65	118	170	213	247	276	299	318	333	345	354	361	366	370	373	375
	4	–	–	1	2	7	18	38	63	88	110	128	145	158	169	178	185	191	195	198	200

1953	1	111	571	723	781	809	825	835	842	847	850	853	855	856	857	858	859	859	859		
	2	1	14	112	254	365	448	510	555	588	612	630	644	654	661	666	669	671	672		
	3	–	–	3	21	63	115	165	208	243	272	296	317	333	345	354	361	366	369		
	4	–	–	–	1	6	18	38	62	85	105	123	139	152	163	172	179	184	188		
1958	1	103	587	747	806	834	850	860	866	870	873	875	877	878							
	2	1	15	119	268	387	480	551	600	635	658	674	686	694							
	3	–	1	5	25	68	121	173	217	254	283	307	327	342							
	4	–	–	–	2	7	20	40	62	83	101	117	131	142							
1963	1	97	601	757	812	838	852	862	868												
	2	3	22	134	285	407	501	570	618												
	3	–	2	7	27	68	115	160	199												
	4	–	–	–	1	6	17	32	48												
Netherlands[h]																					
1948	1	129	514	664	729	764	783	795	803	808	812	814	816	817	818	819	820	820	820	820	820
	2	2	24	166	320	430	507	561	597	623	640	652	661	666	670	673	675	677	678	679	679
	3	–	–	7	51	130	201	259	306	344	375	398	415	428	438	445	450	454	457	459	460
	4	–	–	–	3	19	55	91	127	158	185	207	225	239	252	262	270	275	279	282	284
1953	1	115	493	655	730	769	792	806	815	821	825	828	830	831	832	833	833	833	833		
	2	1	21	150	306	430	519	582	622	650	670	683	692	698	702	705	707	708	709		
	3	–	1	6	42	111	179	241	292	334	368	394	415	429	439	446	451	455	457		
	4	–	–	–	2	14	44	78	111	142	170	193	213	227	238	246	252	257	260		
1958	1	110	500	673	756	798	823	839	848	854	858	861	863	864							
	2	1	20	149	318	456	558	625	670	698	716	728	736	741							
	3	–	–	5	39	106	177	244	298	340	371	394	414	426							
	4	–	–	–	2	13	37	68	96	121	143	161	177	189							
1963	1	120	518	703	786	830	855	870	879												
	2	1	23	144	311	462	571	643	689												
	3	–	–	5	28	74	130	189	243												
	4	–	–	–	1	5	16	32	50												
Norway[i]																					
1948	1	202	545	675	731	760	778	789	796	801	804	806	808	809	810	810	810	810	810	810	810
	2	2	27	122	236	343	434	500	548	581	602	616	626	633	637	640	642	643	644	645	645
	3	–	1	7	26	64	105	148	192	228	261	289	312	329	341	352	359	364	368	371	372
	4	–	–	–	2	7	18	32	47	64	81	97	112	125	138	148	155	161	166	170	173
1953	1	209	576	699	758	788	805	816	823	827	830	832	833	834	835	836	836	836	836	836	
	2	–	24	143	279	398	493	559	602	631	649	661	669	675	679	681	683	684	685	685	
	3	–	–	4	27	71	117	169	215	259	294	325	349	367	380	389	395	400	403	405	
	4	–	–	–	1	6	16	32	50	71	90	109	127	144	157	168	176	182	186	189	
1958	1	245	637	743	795	822	836	845	851	856	859	861	862	863	864						
	2	–	32	182	338	471	566	632	672	696	713	724	730	734	737						
	3	–	–	6	39	94	157	219	275	325	362	392	415	431	442						
	4	–	–	–	1	8	25	46	70	94	116	136	155	169	182						

APPENDIX TABLE A.V.4 (*concluded*)

Cumulative marital fertility by duration of marriage and birth order for selected marriage cohorts

(Rate per 1,000 marriages)[a]

Country and marriage cohort	Birth order	Duration of marriage (years)[b]																				
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1963	1	257	662	768	815	838	853	862	867	870												
	2	–	40	211	384	515	610	667	702	723												
	3	–	1	10	48	104	165	224	270	312												
	4	–	–	–	2	9	22	40	57	73												
Sweden[g]																						
1953	1	197	444	550	610	648	672	687	697	704	709	713	716	718	719	720	721	722	722			
	2	12	50	134	232	327	408	465	506	534	553	568	579	587	593	597	599	600	601			
	3	3	9	18	35	61	90	122	151	178	202	222	241	256	267	275	280	283	285			
	4	1	2	3	6	10	17	26	35	45	55	64	74	83	91	96	100	103	105			
1958	1	189	455	564	631	669	693	709	718	724	728	732	734	736								
	2	13	50	132	236	343	437	511	559	592	613	626	634	639								
	3	1	4	12	26	51	83	121	158	193	220	240	254	265								
	4	–	–	1	3	7	2	0	0	9	9	7	4	0								
1963	1	197	485	607	674	710	731	744	752	757	761	764	766									
	2	12	56	157	288	421	514	576	615													
	3	1	5	13	29	54	81	112	143													
	4	-	–	1	3	6	9	14	19													
Switzerland[k]																						
1948	1	154	510	635	691	720	739	750	758	763	767	770	772	774	775	775	776	776	776	776	776	
	2	4	49	193	327	427	495	540	570	590	604	614	620	624	627	628	630	631	632	633	633	
	3	–	2	15	60	124	182	231	271	301	324	341	353	362	369	374	378	381	382	383	384	
	4	–	–	1	5	20	45	72	98	119	138	154	166	176	184	190	195	198	201	204	206	
1953	1	160	517	645	708	742	763	775	784	789	792	795	797	799	800	801	802	802	802			
	2	3	47	192	336	446	520	568	600	622	636	646	653	658	662	664	665	666	667			
	3	–	2	14	59	122	182	235	275	309	332	351	366	376	384	389	392	395	396			
	4	–	–	1	4	17	40	66	92	114	130	145	158	168	176	181	184	187	189			
1958	1	169	549	677	740	776	798	810	819	824	827	830	832	833								
	2	4	48	202	356	467	544	595	628	651	667	679	687	692								
	3	–	2	14	59	124	186	238	276	307	328	344	355	368								
	4	–	–	1	4	17	39	64	86	104	119	130	138	144								
1963	1	193	596	744	817	863	884	897	905													
	2	5	51	199	352	498	580	635	672													
	3	–	2	12	49	110	157	197	228													
	4	–	–	1	3	13	25	38	50													

United Kingdom																				
England and Wales[l]																				
1953	1	270	481	591	668	724	762	788	805	818	827	833	838	841	843	844	845			
	2	3	54	158	265	361	441	503	550	586	610	630	644	654	661	666	669			
	3	–	2	15	45	84	126	167	205	238	265	290	309	324	336	344	350			
	4	–	–	1	5	15	30	48	67	85	102	119	133	144	153	160	166			
1958	1	316	535	652	729	782	818	844	859	870	877	882	886							
	2	3	66	194	323	434	520	589	634	666	688	704	714							
	3	–	3	19	60	114	169	224	266	301	329	351	367							
	4	–	–	1	7	21	42	66	87	106	123	137	149							
1963	1	340	554	672	748	795	826	844												
	2	8	88	231	374	488	575	632												
	3	1	6	26	66	112	162	208												
	4	–	1	4	9	19	34	50												
Scotland[m]																				
1953	1	299	543	639	694	727	748	761	771	778	783	787	790	792	793	794	795	796	796	796
	2	8	73	199	319	415	486	534	567	588	603	613	620	625	628	630	631	632	633	633
	3	3	8	25	66	119	172	220	261	292	318	338	353	364	372	378	382	384	386	387
	4	2	3	5	11	26	48	72	97	120	140	157	171	183	192	198	202	205	208	210
1958	1	310	557	653	706	737	758	772	781	787	792	795	798	800	801	802				
	2	6	71	221	349	447	514	558	589	607	618	627	633	637	640					
	3	2	6	25	77	143	204	255	294	321	343	358	369	377	383					
	4	1	2	4	11	30	58	87	113	134	152	166	177	185	191					
1963	1	323	553	645	695	725	743	755	762	767										
	2	9	90	241	372	471	537	578	605	622										
	3	3	8	28	74	129	182	227	264	292										
	4	2	3	6	12	26	46	66	84	99										

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[a] Except where otherwise stated, the rates are net rates for women marrying below age 50 years. The methodology is discussed in appendix table A.V.3, foot-note *a*.

[b] "Years of marriage" refers to completed years for countries where 0 duration has been recorded, and to exact duration for those where the series starts with duration 1.

[c] Birth order defined by live births in the existing marriage.

[d] Birth order defined by births in the existing marriage.

[e] Rates corrected to take into account repatriation from Indo-China and North Africa, especially Algeria, around 1962; c.f. C. Blayo, "Fécondité des mariages de 1946 à 1964 en France", *Population*, Paris, 23rd year, No. 4 (July-August 1968). Birth order defined by live births in the existing marriage.

[f] Gross rates for all women irrespective of age at marriage. Birth order defined by legitimate or legitimized live births in the existing marriage.

[g] Birth order defined by births in the existing marriage up to 1961 and by legitimate births of the mother from 1961 on.

[h] Birth order defined by births in the existing marriage.

[i] Birth order defined by live births in the existing marriage.

[j] Still births included. Birth order defined by births of the two spouses together, including pre-marital births.

[k] Swiss marriages only. Birth order defined by live births in the existing marriage.

[l] Gross rates for women aged 15 to 44 years and married once only. Birth order defined by all live births of the woman.

[m] Birth order defined by all live births of the woman.

APPENDIX TABLE A.VI.1

Population and population changes in Europe, 1950-1970

(*Thousands*)

Region and country	End of year population			Population increase			Natural population increase			Implied net migration		
	1950	1960	1970	1950-1960	1960-1970	1950-1970	1950-1960	1960-1970	1950-1970	1950-1960	1960-1970	1950-1970
Eastern Europe	88902	97091	103305	8189	6214	14403	10702	7316	18018	−2513	−1102	−3615
Bulgaria	7254	7905	8515	651	610	1261	764	630	1394	−113	−20	−133
Czechoslovakia	12464	13717	14370	1253	653	1906	1239	808	2047	14	−155	−141
German Democratic Republic	18370	17183	17055	−1187	−128	−1315	714	400	1114	−1901	−528	−2429
Hungary	9380	10006	10335	626	329	955	788	339	1127	−162	−10	−172
Poland	25047	29795	32670	4748	2875	7623	4983	3157	8140	−235	−282	−517
Romania	16387	18485	20360	2098	1875	3973	2214	1982	4196	−116	−107	−223
Northern Europe	72034	75706	80099	3672	4393	8065	4163	4835	8998	−491	−442	−933
Denmark	4287	4594	4951	307	357	664	357	322	679	−50	35	−15
Finland	4030	4446	4598	416	152	568	486	329	815	−70	−177	−247
Ireland	2963	2827	2964	−136	137	1	263	289	552	−399	−152	−551
Norway	3280	3595	3888	315	293	608	328	291	619	−13	2	−11
Sweden	7042	7498	8081	456	583	1039	365	360	725	91	223	314
United Kingdom	50432*	52746	55617	2314	2871	5185	2364	3244	5608	−50	−373	−423
Western Europe	123030	135236	148859	12206	13623	25829	8172	8876	17048	4034	4747	8781
Austria	6934	7061	7441	127	380	507	262	347	609	−135	33	−102
Belgium	8658	9178	9651	520	473	993	429	357	786	91	116	207
Germany, Federal Republic of	50336	55785	61001	5449	5216	10665	2735	3095	5830	2714	2121	4835
France	41896	45904	51012	4008	5108	9116	2854	3111	5965	1154	1997	3151
Luxembourg	296	315	340	19	25	44	11	10	21	8	15	23
Netherlands	10189	11556	13119	1367	1563	2930	1507	1449	1956	−140	114	−26
Switzerland	4721	5437	6295	716	858	1574	374	507	881	342	351	693
Southern Europe	109028	118009	127121	8981	9112	18093	12488	13004	25492	−3507	−3892	−7399
Albania	1228	1633	2200	405	567	972	402	528	930	3	39	42
Greece	7600	8372	8805	772	433	1205	963	839	1802	−191	−406	−597
Italy	46930	49849	53552	2919	3703	6622	4025	4429	8454	−1106	−726	−1832
Malta	313	329	330	16	1	17	58	31	89	−42	−30	−72
Portugal	8510	8890	8610	380	−280	100	1091	1073	2164	−711	−1353	−2064
Spain	27980	30431	33824	2451	3393	5844	3328	3891	7219	−877	−498	−1375
Yugoslavia	16467	18505	19800	2038	1295	3333	2621	2213	4834	−583	−918	−1501
TOTAL EUROPE	392994	426042	459384	33048	33342	66390	35525	34031	69556	−2477	−689	−3166

Sources: United Nations, *Demographic Yearbook*, various years; OECD, *Labour Force Statistics*, various years; national sources and ECE secretariat estimates.

NOTE. Periods refer to end of year. Countries with a population of less than 200,000 in 1950 are not covered. Total Europe excludes the USSR and Turkey.

APPENDIX TABLE A.VII.1

Population size by age and sex, 1970-2000, according to "most likely" variant [a]

(*Thousands*)

Region, country and age group	*1970*		*1980*		*1990*		*2000*	
	Males	*Females*	*Males*	*Females*	*Males*	*Females*	*Males*	*Females*
Eastern Europe								
Bulgaria								
All ages	4 257	4 258	4 515	4 511	4 693	4 669	4 834	4 768
0-14	991	944	1 025	958	1 024	951	1 019	944
15-44	1 926	1 888	1 910	1 861	1 996	1 915	1 986	1 880
45-59	747	750	918	930	836	849	914	912
60-74	488	530	508	559	633	693	676	731
75+	105	146	154	203	204	261	239	301
Czechoslovakia								
All ages	7 002	7 366	7 285	7 667	7 517	7 861	7 769	8 075
0-14	1 694	1 619	1 743	1 682	1 733	1 678	1 695	1 641
15-44	3 131	3 097	3 317	3 250	3 485	3 403	3 371	3 298
45-59	1 143	1 242	1 273	1 374	1 253	1 302	1 629	1 664
60-74	865	1 095	743	976	817	1 053	843	1 051
75+	169	313	209	385	229	425	231	421
German Democratic Republic								
All ages	7 851	9 207	8 148	9 211	8 530	9 231	8 923	9 310
0-14	2 043	1 941	1 857	1 766	1 939	1 840	1 911	1 814
15-44	3 380	3 387	3 760	3 644	3 723	3 573	3 856	3 702
45-59	967	1 575	1 280	1 584	1 674	1 706	1 612	1 611
60-74	1 159	1 731	839	1 462	801	1 279	1 238	1 467
75+	302	573	412	755	393	833	306	716
Hungary								
All ages	5 004	5 318	5 186	5 479	5 264	5 503	5 313	5 497
0-14	1 119	1 057	1 166	1 100	1 168	1 102	1 107	1 043
15-44	2 271	2 287	2 286	2 246	2 312	2 226	2 247	2 153
45-59	857	971	982	1 083	949	1 020	1 107	1 128
60-74	623	778	578	757	634	808	667	844
75+	134	225	174	293	201	347	185	329
Poland								
All ages	15 777	16 696	17 202	18 017	18 276	18 936	19 020	19 516
0-14	4 458	4 288	4 103	3 929	4 149	3 956	3 797	3 616
15-44	7 438	7 412	8 251	8 093	8 778	8 563	8 455	8 197
45-59	2 158	2 560	2 935	3 223	2 911	3 028	3 783	3 827
60-74	1 452	1 926	1 488	2 003	1 885	2 411	2 350	2 775
75+	271	510	425	769	553	978	635	1 101
Romania								
All ages	9 942	10 302	10 910	11 194	11 795	11 981	12 793	12 856
0-14	2 682	2 561	2 944	2 811	2 901	2 769	3 151	2 998
15-44	4 636	4 568	4 686	4 572	5 207	5 023	5 422	5 222
45-59	1 439	1 679	2 013	2 125	2 032	2 080	2 142	2 135
60-74	991	1 183	975	1 257	1 267	1 525	1 648	1 843
75+	194	311	292	429	388	584	430	658
Northern Europe								
Denmark								
All ages	2429	2473	2551	2584	2641	2664	2730	2738
0-14	588	560	575	548	579	553	610	581
15-44	1022	995	1132	1075	1172	1114	1133	1088
45-59	434	449	414	426	450	443	554	532
60-74	297	348	324	374	318	369	309	348
75+	88	121	106	161	122	185	124	189

APPENDIX TABLE A.VII.1 *(continued)*

Region, country and age group	*1970*		*1980*		*1990*		*2000*	
	Males	*Females*	*Males*	*Females*	*Males*	*Females*	*Males*	*Females*
Finland								
All ages	2 225	2 381	2 272	2 439	2 282	2 445	2 232	2 390
0-14	578	555	478	459	441	422	390	373
15-44	1 044	1 011	1 136	1 099	1 142	1 111	999	976
45-59	346	419	377	419	393	417	526	551
60-74	217	313	224	343	240	349	252	342
75+	40	83	57	119	66	146	65	148
Ireland								
All ages	1 496	1 482	1 677	1 669	1 903	1 889	2 150	2 127
0-14	476	455	536	510	624	595	675	644
15-44	564	546	684	660	808	775	929	890
45-59	237	236	218	222	228	227	304	301
60-74	167	177	181	195	174	197	170	189
75+	52	68	58	82	69	95	72	103
Norway								
All ages	1 930	1 949	2 025	2 052	2 116	2 132	2 189	2 200
0-14	486	462	480	455	486	459	494	465
15-44	765	731	858	822	940	899	940	901
45-59	362	368	324	326	313	310	413	407
60-74	241	281	271	310	270	306	228	258
75+	76	107	92	139	107	158	114	169
Sweden								
All ages	4 016	4 026	4 140	4 183	4 168	4 244	4 177	4 256
0-14	861	816	881	835	845	800	837	793
15-44	1 653	1 578	1 741	1 654	1 751	1 681	1 688	1 615
45-59	780	779	701	706	746	723	875	857
60-74	556	622	611	677	582	658	530	590
75+	166	231	206	311	244	382	247	401
United Kingdom								
All ages	27 081	28 587	28 307	29 659	29 868	30 990	31 618	32 463
0-14	6 925	6 573	6 976	6 619	7 348	6 957	7 704	7 290
15-44	10 970	10 677	12 074	11 633	13 159	12 622	13 789	13 155
45-59	4 941	5 195	4 755	4 897	4 741	4 740	5 571	5 541
60-74	3 441	4 424	3 530	4 449	3 485	4 318	3 408	4 086
75+	804	1 718	972	2 061	1 135	2 353	1 146	2 391
Western Europe								
Austria								
All ages	3 494	3 952	3 520	3 921	3 578	3 882	3 617	3 836
0-14	933	890	805	768	762	727	760	725
15-44	1 449	1 436	1 607	1 571	1 651	1 613	1 623	1 584
45-59	523	716	593	699	644	665	689	716
60-74	474	675	376	594	388	577	433	538
75+	115	235	139	289	133	300	112	273
Belgium								
All ages	4 732	4 928	4 793	5 012	4 864	5 063	4 885	5 067
0-14	1 170	1 112	1 030	979	1 025	974	1 013	963
15-44	1 977	1 923	2 094	2 021	2 180	2 106	2 113	2 039
45-59	805	843	916	945	841	850	925	925
60-74	614	773	544	692	598	730	624	761
75+	166	277	209	375	220	403	210	379
France								
All ages	24 653	25 871	26 460	27 376	28 128	28 736	29 621	29 952
0-14	6 398	6 154	6 527	6 256	6 619	6 345	6 551	6 274
15-44	10 744	10 245	11 460	10 994	12 544	12 161	12 744	12 367
45-59	3 832	4 050	4 732	4 812	4 458	4 361	5 303	5 230
60-74	2 941	3 803	2 676	3 318	3 173	3 646	3 646	3 982
75+	738	1 619	1 065	1 996	1 334	2 223	1 377	2 099

Appendix table A.VII.1 (*continued*)

Region, country and age group	*1970*		*1980*		*1990*		*2000*	
	Males	*Females*	*Males*	*Females*	*Males*	*Females*	*Males*	*Females*
Germany, Federal Republic of								
All ages	29 072	31 929	29 210	31 611	29 206	30 857	28 835	29 833
0-14	7 228	6 874	5 992	5 695	5 534	5 247	5 412	5 138
15-44	12 923	12 122	13 680	12 882	12 878	12 398	12 298	11 886
45-59	4 241	5 809	5 331	5 853	6 392	6 045	5 735	5 637
60-74	3 791	5 407	3 093	4 955	3 297	4 687	4 463	5 032
75+	889	1 717	1 114	2 226	1 105	2 480	927	2 190
Netherlands								
All Ages	6 465	6 493	7 061	7 129	7 563	7 666	7 972	8 081
0-14	1 815	1 733	1 797	1 714	1 860	1 774	1 816	1 728
15-44	2 823	2 686	3 260	3 077	3 486	3 346	3 537	3 409
45-59	983	1 040	1 083	1 114	1 211	1 156	1 526	1 478
60-74	641	765	689	852	753	933	822	959
75+	203	269	232	372	253	457	271	507
Switzerland								
All ages	2 478	2 695	2 571	2 803	2 640	2 891	2 677	22 933
0-14	610	584	547	521	540	521	505	482
15-44	1 021	1 068	1 126	1 160	1 145	1 172	1 112	1 144
45-59	436	480	439	498	463	521	552	598
60-74	325	418	339	421	346	434	348	446
75+	86	145	120	203	146	243	160	263
Southern Europe								
Albania								
All ages	1 096	1 073	1 434	1 396	1 819	1 764	2 164	2 097
0-14	470	449	569	539	676	641	678	646
15-44	457	447	636	619	834	802	1074	1028
45-59	102	102	141	141	194	192	248	245
60-74	53	57	70	75	91	99	133	142
75+	14	18	18	22	24	30	31	36
Greece								
All ages	4 260	4 503	4 397	4 634	4 668	4 854	4 936	5 055
0-14	1 114	1 061	1 057	1 005	1 065	1 012	1 157	1 098
15-44	1 809	1 904	1 749	1 796	1 978	1 949	2 075	2 004
45-59	689	750	825	892	752	826	766	801
60-74	511	587	570	655	608	699	685	791
75+	137	201	196	286	265	368	253	361
Italy								
All ages	26 166	27 399	27 705	28 921	29 026	30 110	30 277	31 164
0-14	6 653	6 399	6 577	6 292	6 429	6 132	6 632	6 322
15-44	11 513	11 447	12 042	11 782	12 633	12 242	12 775	12 354
45-59	4 358	4 765	5 088	5 456	5 226	5 422	5 484	5 493
60-74	2 869	3 537	3 054	3 804	3 506	4 306	4 068	4 840
75+	773	1 251	944	1 587	1 232	2 008	1 318	2 155
Portugal								
All ages	4 231	4 670	4 626	5 034	5 054	5 433	5 465	5 801
0-14	1 294	1 229	1 271	1 215	1 321	1 270	1 399	1 346
15-44	1 801	1 982	2 130	2 186	2 406	2 342	2 490	2 420
45-59	636	744	677	843	719	904	935	1017
60-74	407	549	449	601	472	666	495	741
75+	93	166	99	189	136	251	146	277
Spain								
All ages	16 576	17 380	18 481	19 159	20 505	21 025	22 543	22 906
0-14	4 858	4 630	5 106	4 848	5 643	5 380	6 128	5 840
15-44	7 048	7 109	7 821	7 742	8 965	8 700	9 923	9 568
45-59	2 609	2 876	3 194	3 356	3 023	3 197	3 393	3 494
60-74	1 645	2 071	1 802	2 298	2 226	2 670	2 338	2 794
75+	416	694	558	915	648	1 078	761	1 210

APPENDIX TABLE A.VII.1 *(concluded)*

Region, country and age group	*1970*		*1980*		*1990*		*2000*	
	Males	*Females*	*Males*	*Females*	*Males*	*Females*	*Males*	*Females*
Yugoslavia								
All ages	10 004	10 367	11 003	11 296	11 966	12 141	12 803	12 850
0-14	2 863	2 726	2 838	2 691	2 986	2 816	3 022	2 849
15-44	24 815	4 766	5 149	4 999	5 510	5 293	5 622	5 382
45-59	1 237	1 513	1 919	2 127	2 045	2 116	2 289	2 289
60-74	916	1 083	842	1 094	1 117	1 438	1 557	1 807
75+	173	279	255	385	308	478	313	523
USSR								
All ages	111 802	130 966	125 866	142 651	141 851	155 125	155 607	165 599
0-14	35 425	34 115	33 364	32 144	39 008	37 557	40 204	38 758
15-44	54 408	56 090	61 111	60 806	64 780	63 613	69 495	67 981
45-59	12 596	21 116	20 265	25 669	22 012	24 294	23 750	25 016
60-74	7 585	15 324	8 569	17 151	12 415	20 095	18 229	23 911
75+	1 788	4 321	2 557	6 881	3 636	9 566	3 929	9 938

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[a] See table VII.1.

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